Adolescence and context, the relevance of the neighbourhood and family for adolescent health and well-being

Adolescence and context, the relevance of the neighbourhood and family for adolescent health and well-being

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I, Jane French confirm this is all my own work …….

ABSTRACT

Despite previous studies investigating the possible influences of the neighbourhood, parents and peers for adolescent health and well-being, there is a lack of consensus about the relative importance of these different contexts. This study used an ecological framework to examine the relationships between structural and social neighbourhood characteristics, family support, peer relationships, youth volunteering and adolescent psychological adjustment, perceived health, weight and health related behaviours, and overall life satisfaction.

The main cross-sectional study of 209 adolescents and 65 of their parents took place in two UK locations, a large multicultural town and a rural village. As a strategy to strengthen the methods of perceiving and assessing neighbourhood constructs, the research included a qualitative study of 11 adolescents. Thematic analysis was used to explore teenagers' perspectives of the neighbourhood and its relevance for health and happiness.

The qualitative study found that opportunities for social connections within the neighbourhood, community cohesion and family support were said to be relevant for adolescents' well-being, confirmed in the main quantitative study. Neighbourhood social cohesion was a significant predictor of health and life satisfaction. Neighbourhood deprivation, social cohesion and the proximal support of friends and family were all significant predictors of psychological adjustment. In contrast the lack of a relationship between neighbourhood deprivation, based on administrative data, with life satisfaction and health suggests an inconsistent role of neighbourhood deprivation for children's health and well-being. Investigation of the potential role of adolescent neighbourhood volunteering found that teenagers who engaged in more helping behaviour were also likely to report better health, engaged in fewer 'health risk' behaviours and had fewer behavioural problems.

Future research including longitudinal and using more refined measures of the neighbourhood that incorporate the views of adolescents, including objective measures such as observations may clarify the processes by which neighbourhood characteristics are relevant for adolescent well-being.

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CHAPTER 1

INTRODUCTION

1.1 Adolescence and context, the relevance of the neighbourhood and family for adolescent health and well-being

There is an accumulating amount of evidence that shared social and structural environments at the neighbourhood level exert significant effects on people's health and quality of life in a number of ways. The clustering of families with few economic resources in high-poverty neighbourhoods can lead to social and economic isolation which compromises children's well-being. Children living in deprived neighbourhoods also have limited access to good schools, safe streets and mainstream economic opportunities (Brooks-Gunn, Duncan & Maritato, 1997). The importance of social interactions within neighbourhoods and their influence on adolescents is highlighted by the current UK Coalition Government's commitment to 'Building the Big Society'. The Government's Cabinet website states 'only when people and communities are given more power can we achieve fairness and opportunity for all,' (Cabinet Office, 2010)

The improvement of children's well-being is a global agenda. UNICEF delivered a well-being report on twenty-one economically advanced nations to promote the development of policies to improve the lives of children (UNICEF, Adamson, 2007). The report includes six dimensions of well-being including material well-being, family and peer relationships and subjective well-being. Despite the previous UK government's social policy agenda and investment to improve children's well-being, the UK was listed in the bottom third for five of the six dimensions.

The main objective of this study is to determine the relative importance of neighbourhood, individual characteristics, families and peers for adolescent well-being. Few empirical studies into adolescent outcomes are grounded in interrelated

social contexts or use data sets that enable multilevel analysis of the effects of neighbourhood (Rankin & Quane, 2002). The environments adolescents experience are critical, as they mature adolescents spend less time with the family and more time in new contexts, with peers, in the community, and at work and these contexts can support well-being or increase risk (Call, Riedel, Hein, McLoyd, Peterson & Kipke, 2002). Community research is often reliant on reports of adolescent outcomes from parents', teachers' and other adults' perspectives. This study has addressed this by obtaining reports from both young people and their parents about their health and well-being within multiple contexts.

1.2 Structure of Thesis

The thesis consists of six chapters; the present introduction chapter opens with a brief summary of the objectives of the thesis and background to the research.

Chapter 2, literature review, this chapter specifically discusses the neighbourhood contexts influential for adolescents' health and well-being and the main theoretical positions about neighbourhood research. The challenges for researchers both in defining the neighbourhood and in overcoming methodological problems are also reported. The proximal influences of peers and family are examined and the chapter concludes with an outline of the research questions.

Chapter 3, methodology, the qualitative and quantitative study methodologies involved in the three studies is discussed. The sample, procedure, measures and the analytical strategies are detailed. This section also includes a summary of the ethical procedure, particularly relevant because of adolescents' involvement in the research.

Chapter 4, Qualitative study, the chapter includes a discussion about the use of Thematic analysis for the methodology for analysis and describes from an idiographic perspective adolescents' experience of the neighbourhood, health and well-being.

Included is a selection of talk, representing the ‘voice’ of the adolescents and a summary of master themes relevant for them to flourish.

Chapter 5, Quantitative Studies, includes a summary of the analysis relevant to the research questions. The chapter first outlines the child demographic characteristics, progressing to the results of the descriptive analysis. A summary of the associations and multiple regression computations are also discussed for the predictor variables (structural and social neighbourhood, peers and family) and adolescent health and well-being outcomes.

Chapter 6, Parent quantitative study, includes a summary of the analysis relevant to research question six. The chapter first outlines the descriptive analysis of parents’ perspective of family management and the neighbourhood. Correlation and multiple regression computations are also discussed for the predictor variables (parent and child agreement about the neighbourhood; deprivation, peers and family) and adolescent health and well-being outcomes.

Chapter 7, Discussion chapter, the results of the studies with relevance to the research questions is reported. The role of structural neighbourhood characteristics and social cohesion and the family and peers results are analysed with relevance to the literature. The role of parent and child agreement as a factor for predictor child outcomes is also considered. The contrasting factors relevant for emotional adjustment, life satisfaction and children’s health are evaluated. The chapter also examined the adolescent social capital index and analysis of the limitations, ideas for potential interventions and future research ideas are proposed.

CHAPTER 2

LITERATURE REVIEW

2.1 Defining the Neighbourhood

The Oxford Dictionary (2011) defines a neighbourhood as ‘a district or community within a town or city’ but defining the neighbourhood presents an on-going challenge for researchers. Chaskin (1997) in a review of the neighbourhood and community literature identified a range of problems in defining the two constructs, sometimes used interchangeably. He argued ‘community’ was related to three types of connections; firstly, between people through social connections e.g. friends; secondly through cultural connections e.g. ethnic identity; and finally by incidental connections e.g. economic status or lifestyle. He further argued that ‘neighbourhood’ was a spatial construction representing a geographical area in which inhabitants share local amenities and other features within it. Chaskin (1997) described the neighbourhood as a subset of a larger area, which tended to be residential, and is often defined by the same characteristics as a community, and recognised that the overlap in these definitions presented challenges for researchers.

Nicotera (2007) discussed this duality and posited the neighbourhood as an environment and neighbourhood as a place. Environment and place are often used interchangeably but are likely to mean different things to researchers and people residing in an area (Barnes, Katz, Korbin & O’Brien, 2006). This environment-place dichotomy provides a useful framework and captures objective structural characteristics as well as subjective elements in a neighbourhood. Gephert (1997) agreed with the importance of exploring objective and subjective elements of the neighbourhood when studying influences on young people’s development. She defined the neighbourhood as ‘neighbourhoods and communities are the immediate social contexts in which individuals and families engage with the institutions and social

agents that regulate and control access to community opportunity structures and resources' (p.9).

The work by Kemp (2001) provides a further perspective, she construed environment as a 'static context that most people experience in some way' (p10). In this description researchers who do not live in the neighbourhood are 'outsiders' and lack a measure of transactional processes among residents. Kemp (2001) defined place as representing a person's or groups lived experience of an environment over time. She argued for a research framework which includes both an environment and place continuum. A neighbourhood could be viewed as an environment but it is individual's relationships to a neighbourhood that makes it a place.

The definition of place is further complicated by the rise in social networking over the internet. Over the last decade the role of personal networking in relation to the sense of belonging to a place has been weakened since many members of virtual communities share no geographical connections. These cyber 'communities without propinquity' (Calhoun, 1998) makes the study of communities more challenging. Social networking sites (SNS) such as Facebook and Twitter are referred to as online communities. This new aspect, which is very important for adolescents, may be changing and possibly weakening the way neighbourhoods influence outcomes for young people. A study by Reich and Irvine (2010) into SNS suggests typical adolescent use of Facebook and MySpace represent networked individualism rather than online communities. Clearly with the technological advances in the ways young people interact with peers, family and the wider community this area will require further examination.

The variety of ways the neighbourhood and place are defined may be further complicated by direct reports from young people about their views of the neighbourhood as well as their parents, teachers and other community adults e.g.

youth workers. Young people's definition of neighbourhood and place will mean different things influenced by the way they interact with the neighbourhood and their social relationships. Researchers (Hendry, 1993) argued the use of neighbourhoods declined as adolescents increased in age. Older adolescents were found to have fewer activities or social ties to the neighbourhood. Burton and Jarrett (2000) argued for social science researchers to 'assess how' 'ways of thinking about' and 'ways of measuring' neighbourhood influence understanding of child development. Research into adolescents' and parents' perspectives of place and environment and the nature of their social connections within a neighbourhood requires further investigation to improve understanding of the neighbourhood construct.

2.2 Neighbourhood theory

Conceptualising the theories relating neighbourhood influence to adolescent outcomes is complex due to the multidisciplinary nature of many theories. The main theoretical positions are delineated into five categories:

2.2.1 Ecological theory

2.2.2 Geographical neighbourhood theory

2.2.3 A neighbourhood risk framework

2.2.4 Neighbourhood and child agency

2.2.5 Pluralistic neighbourhood theory

2.2.1 Ecological theory

Ecological theory emphasises the importance of multiple contexts for the developing child. Bronfenbrenner's (1979) ecological theory described a child's development within the context of the environmental settings and proposed that the child is nested in an ecological structure which can be conceptualised like a Russian doll. He proposed four complex 'layers' of environment, each affecting the child's development. The first layer 1) the microsystem, includes environments within which

the child is located such as the family, school and neighbourhood. He emphasised the importance of the bi-directional interactions between the growing child and their immediate environment. The next layer 2), the mesosystem, contains the interrelations among two or more setting or Microsystems in which the developing child participates. The final layers 3) the exosystem and 4) the macrosystem are more distant to the child and include contexts which the child is not usually in context with such as a parent's place of work (the exosystem) and broader influences of a national culture or sub-culture such as attitudes, belief systems and laws (macrosystem). When studying child development, Bronfenbrenner (1979) advocated the need to include information from these multiple contexts. An illustration of this is the importance of roles within and across these multiple contexts. He analysed a study by Zimbardo (1973) which investigated male college students in a mock prison environment. The students acted in the role of guards and prisoners and the former group acted in a brutal manner even though they had not shown previously sadistic tendencies. The researchers concluded the roles people play could shape their attitudes and behaviour. Bronfenbrenner (1979) argued for a need to test whether the students' experiences had developmental validity. He argued for before and after data about behaviour in at least one other setting. This approach would enable investigation of role transitions across levels including the mesosystem. He argued human development is facilitated through interaction with people who occupy a variety of roles. Bronfenbrenner (1979) described the primary settings for children as the home and classroom and interactions between the individual family, peers, school and neighbourhood are crucial in appreciating how well adolescents are faring (Barnes et al., 2006).

The acceptance of these more contextual frameworks in developmental psychology has highlighted the need to examine how they influence children. Cooke (2003) also argued for studies to examine multiple contexts. However this can lead to complex

and costly research designs so studies including several potential levels of influence are not as common as those looking at one or perhaps two. This issue is important if a study is to make inferences about a single context effect (neighbourhood). An effect may be confounded by other correlated but unmeasured contexts. Families, schools, peer groups, and neighbourhoods each represent contextual settings where young people must learn tasks necessary to make a successful transition to adulthood.

2.2.2 Geographical neighbourhood theory

The geographical neighbourhood theory tradition examines the relationships between geographic concentrations of social problems and social processes and the influences these concentrations have on children and adolescents. Community research examining neighbourhood deprivation effects on children dates back more than sixty years to social disorganisation theory, set out by Shaw and McKay (1942). They argued that structural characteristics in communities such as residential instability and economic decline obstruct communication and reduce informal social control of the local youth by residents within neighbourhoods. Shaw and McKay (1942) in their classic study also proposed that delinquency was highly correlated with structural features of neighbourhoods such as poverty and poor housing. Large scale studies have subsequently confirmed, in the USA that living in a structurally deprived neighbourhood is predictive of adverse outcomes for adolescents in terms of their physical and mental health, academic achievement and behaviour (Leventhal & Brooks-Gunn, 2000).

An example of the important influences of living in a deprived neighbourhood is a UK study by Barnes and colleagues (Barnes, Belsky, Frost, & Melhuish, 2011) into neighbourhood deprivation and the relevance for mothers and infants. The authors suggested a relationship between deprivation and mothers' poor mental health. When the neighbourhood was characterised by less home ownership and fewer employed

local residents mothers reported more mental health problems. The importance of UK deprived neighbourhoods and the relationship of placing adults and their children at risk requires further attention as large studies are limited.

Deprivation results not only from insufficient neighbourhood financial resources but also from a lack of community resources e.g. poor performing schools. Jencks and Mayer (1990) produced an influential summary of the impact of neighbourhood economic deprivation on children. They proposed five theoretical models to link community poverty and child outcomes and highlighted the importance of financial capital such as income, savings and credit, within families and the neighbourhood. Two of the models, 'competition' and 'relative deprivation' would predict that a mixed community with both advantaged and disadvantaged neighbours is likely to be detrimental for the development of the children from disadvantaged families. When sparse resources are competed for (such as places in good schools) those parents with more resources may manage to help their children more effectively. By comparing your family with more advantaged families (relative deprivation) there would be a feeling of rejection and failure, increasing the likelihood that an underclass would emerge. Other theories such as the 'contagion' model or 'collective socialisation' emphasised the adverse impact of the 'antisocial' role models presented by some of the neighbours living in poverty and expect some benefits from a community where some individuals were achieving, with middle-class occupations and less anti-social behaviour. The final 'institutional' model focused on the way adults, who may or may not be from inside the community, working in schools, the police or other neighbourhood institutions affect local children.

The deterioration of urban neighbourhoods and the associated rise in crime and antisocial behaviour has resulted in new research into the role of the neighbourhood on antisocial adolescent outcomes (Leventhal & Brooks-Gunn, 2000; Trickett, Duran & Horn, 2003). For example researchers (Ludwig & Ladd, 2001) have argued that

neighbourhoods characterised by structural disadvantage also have high rates of juvenile crime and violence and that these associations are largely explained by social processes. Their study proposed relationships between neighbourhood disorder, ineffective parenting and adolescent's involvement with deviant peers were associated with youth reports of higher rates of offending.

A further geographical perspective of the neighbourhood is the issue of different individual neighbourhood perceptions. Barnes (2007) discusses the alternative definitions of the character and size of a neighbourhood given by local residents and concluded that neighbourhoods may be more heterogeneous than research suggests. Geographical neighbourhoods may vary from person to person depending on their age and on what they do e.g. mothers with small children; pensioners. A relational approach to studying place is discussed by Cummins, Curtis, Diez-Roux & Macintyre (2007) and the importance of connecting people and place, he argued for examination of 'processes and interactions that occur between people and the social and physical resources within a neighbourhood' (p.1835). Support for this is found in a qualitative study by Bolam, Murphy and Gleeson (2006) who argued against the traditional lens of geographical inequality, instead suggested studying 'locatedness' of residents' subjectivity. This leads to a perspective of studying individual personal geography which may vary over time and place, as will the neighbourhoods themselves in their structure (Cummins et al., 2007). New tools will be required as shown in the study by Matthews, Detwiler & Burton, (2005) which used geocoded neighbourhoods with family ethno geography to determine the differing geographical movements of families. Future research examining the characteristics of personal geography and child well-being would be helpful.

2.2.3 Neighbourhood risk framework

Neighbourhood research is also shaped by attempting to understand the neighbourhood risk factors that influence adolescent outcomes. Researchers argue that there is not just one single risk or protective factor but the accumulation of factors is likely to result in positive or negative outcomes (Leventhal & Brooks-Gunn, 2000). In this framework the factors measured most often are social organisation; community resources and deficits (Coulton, Crampton, Irwin, Spilsbury & Korbin, 2007). Odgers and colleagues (Odgers, Moffitt, Tach, Sampson, Taylor & Matthews, 2009) studied protective effects of collective efficacy (a measure of neighbourhood social control and cohesion) on British young children growing up in deprivation. The results suggest collective efficacy was negatively associated with levels of antisocial behaviour, in other words it was a protective factor. A further example of this approach is the Canadian study by Brann-Barrett (2010) into socio-economic experience in disadvantaged communities. The study investigated young people's positive and negative perceptions of their neighbourhoods e.g. a lack of recreational infrastructure; the government's lack of interest for the physical environment and barriers for youth to succeed at school. The young people argued that when governments fail to clean up the mess made by corporations, local people develop similar attitudes (Brann-Barrett 2010). As Bourdieu (1999) writes: 'the stigmatized area symbolically degrades its inhabitants, who in return, symbolically degrade it' (p.129, 1999). This research points to the need to consider the complexity within neighbourhoods when researching the risk factors influencing adolescent outcomes and the value of giving agency to adolescents.

2.2.4 Neighbourhoods and child agency - A more active conceptualisation.

The theories already described often take a perspective of studying neighbourhood influences on adolescent outcomes from adult perspectives, whether parents, teachers or other community members. A growing body of researchers have more recently advocated the need to give children's agency a central role. Morrow (1999)

in her qualitative study with UK children used their accounts and group discussions to investigate perceptions of the neighbourhood and neighbours, finding that young people focus on facilities and particularly good quality parks. This approach emphasised the need to 'research with' rather than 'research on' children (Darbyshire, 2000). Asking children directly about their world opens up their views, positioning them as active agents and key informants in matters of their health and well-being. For example a qualitative study in the USA by Nicotera (2008) involved children (4th and 5th year grade) creating colourful drawings about how their neighbourhood was and how they would like it to be, and they completed written descriptions of their neighbourhoods and their neighbourhood experiences. The researcher introduced herself and explained as she was no longer a child she was coming to them as experts. The results of the study included nine dimensions of the construct neighbourhood. These dimensions represented places and neighbours which provided children with opportunities to gain competencies that range from cognitive and physical skills to social emotional skills. Problems were also identified concerning the absence of adequate play spaces and play mates and the presence of disagreeable characters. An example of children's' voices about the dimensions of neighbourhood, 'A place I like in my neighbourhood is the forest right next door to my house. I like it because I like building club houses with sticks and branches'. 'A neighbour I like is the person next to my house. She helps me in my assignments, takes me some place I need to go to, takes care of me…' (p. 344). The nuances uncovered by giving children agency is an important area requiring further research.

2.2.5 Pluralistic neighbourhood theory

Aber and Nieto (2000) proposed a pluralistic neighbourhood theory which takes a positive perspective of wellness. They argued that neighbourhood research has focused mainly on the socially and psychologically toxic elements of neighbourhoods. They also criticised geographical research for assumptions that a typical

neighbourhood would consist of a small demographically homogenous area as defined by many studies using data about census tracts and other government sets of statistics e.g. indices of deprivation. They suggest that it is important to collect different ways of defining the neighbourhood as well as paying attention to a positive perspective. Studies that encourage neighbourhood comparison result in less attention to the variation within neighbourhoods. The variability within deprived neighbourhoods was noted in the local context analysis of the National Evaluation of Sure Start (Barnes, Belsky, Broomfield, & Melhuish, 2006). Pluralistic neighbourhood theory highlights the importance of examination of within neighbourhood group variation to enable more valid understanding of neighbourhood effects.

2.3 Structural neighbourhood effects and adolescent health and well-being

Associations have been reported between structural characteristics in communities such as residential instability, the extent of green space and economic decline and young people's health outcomes (Sellstrom, & Bremberg, 2006). An important representation of neighbourhood structural characteristics is the socio-economic status (SES) of residents but aspects related to housing (e.g. residential tenure) can be more useful when attempting to understand social networks. Recently researchers have argued for the need to distinguish different types of SES to help understanding concerning the complex relationship between poor neighbourhoods and health (Adler & Stewart, 2010). There is a lack of consensus on how best to measure the construct. Some studies uses a single SES indicator e.g. individual income, others have created composite scales e.g. income, education and residential tenure (Oakes & Rossi, 2003). A further problem is the meaning and measurement of SES differs between groups. A US study found the same level of income may have different implications for African Americans compared to Caucasians because, for African Americans a specific level of income provides relatively fewer resources and is associated with fewer health benefits (House & Williams, 2000). The researchers explained this by

proposing that the SES and ethnic composition of African American segregated areas may have an effect on individual health that was not mediated through individual SES and ethnic status. The SES and ethnic characteristics in a neighbourhood may affect people's health by shaping the nature of the social and physical environment of the area.

Understanding which specific level of an SES indicator is associated with variability in health is critical to develop interventions to improve the lives of young people. There is considerable work with adult populations but fewer studies have explored the relevance of neighbourhood deprivation and specifically neighbourhood SES for adolescent health. SES is consistently found to be a significant predictor of a variety of adult self-reported health variables after controlling for individual and family factors (Malmström, Sundquist, & Johansson, 1999). A study by Chen and Paterson (2006) examined the associations between different neighbourhood SES measures and adolescent physical health as well as psychological measures and concluded that the neighbourhood exerts an important influence on adolescent physical health outcomes. The study found lower neighbourhood and lower family SES were both associated with a higher adolescent body-mass index (BMI). Lower neighbourhood education, employment status, income and assets were all associated with higher adolescent BMI. In addition lower SES was associated with lower base cortisol levels. In contrast fewer associations were present for blood pressure and heart rate (Chen & Paterson, 2006).

While research supports the relationship between the absolute level of neighbourhood deprivation and poor health, studies have conflicting results. Cox (Cox, Boyle, Davey, Feng, & Morris, 2007) in a study into relative deprivation found residents of areas with more surrounding deprivation suffered higher levels of ill health, measured by diabetes 2. The authors argued the poorer areas surrounded by less deprived areas benefit from better resources which in turn benefited residents' health. Zhang (Zhang,

Cook, Jarman, & Lisboa, 2011) reached a different conclusion, finding increased relative deprivation was associated with increased mortality, even for more affluent cohorts of the population. Zhang et al., (2011) suggested the reason for the different results to the earlier study was due to the Cox et al., (2007) study investigating the relationship between Indices of Deprivation and adjacent locality deprivation, making it difficult to identify any effect of the deprivation of the surrounding areas on its own. Zhang et al., (2011), to circumvent this, used principal component analysis to disaggregate the adjacent area. The authors (Zhang et al., 2011) discuss Wilkinson's (1997) psychosocial model which suggests social comparison leads to worse health in areas surrounded by affluent places. The authors argued deprivation affects an individual's status resulting in frustration and stress which in turn leads to adverse health outcomes. The importance of relative deprivation (as described by Jencks & Mayer, 1990) is supported by the Stafford and Marmot study (2003) which found affluent people living in poorer areas rate themselves as higher on the social ladder than equally affluent people living in affluent neighbourhoods. Conversely people who are poorer but live in more affluent areas rate themselves as higher on the social ladder than equally poor people living in poor areas. Clearly, there are different theories regarding the pathways involved in relative deprivation and the influences on health and well-being.

Other aspects of neighbourhoods are also crucial for children faring well emotionally (Earls & Carlson, 2002). A neighbourhood with fewer resources and characterised by crime may contribute to lower adolescent well-being including poorer mental health. A more recent study by Snedker & Hooven (2013) concluded neighbourhood signs of a lack of resources were linked to negative perceptions of neighbourhood stressors and young adults' mental health. However the picture is further complicated by the fact that different adolescent health and well-being measures may be related to different aspects of neighbourhood quality (Curtis et al., 2004). For example behavioural and

emotional scores may be more closely related to neighbourhood social capital and accidents or injury more connected to the neighbourhood structure and in particular those aspects such as traffic conditions that affect physical safety. It is argued that neighbourhoods may influence health behaviours because of shared norms governing activities in social groups, one aspect of social capital (Edwards, Franklin & Holland, 2003).

An important structural neighbourhood contributor to children's health is the availability of greenness and space for physical activity. Neighbourhood greenness has been found to have a negative association with children and youth's BMI scores in the USA (Bell, 2008). Greenery is crucial to health and well-being generally (De Vries, 2006). There are additional psycho-social benefits of access and contact to nature, a study into access to greenery for New York inner city children found nearby nature buffered the effects of stressful effects on children's psychological distress (Wells, 2003).

There are other influences besides greenness on physical activity such as culture. A study by Ramamathan (2009) into family and culture and physical exercise found physical activity was reduced for girls if they had a strong affinity to Indian cultures. Opportunities for adolescent physical activity are important to prevent obesity, which has become a major health risk for adolescents. The UK's Department of Health has developed a National Childhood Obesity database, with the latest study finding an increase in the prevalence of obesity in primary school children (DH, 2007). The Department of Health initiative, 'Change 4 Life' (DH, 2009) aims to help families to eat well and be more physically active, particularly, in the local neighbourhood. A study by Franzini (2009) found a negative association between physical activity and obesity in children. This trend has resulted in health professionals and governments in the developed world examining the influences on why children are putting on weight. Not only are there physical health risks of obesity e.g. type 2 diabetes but it also impacts

on psychological well-being, such as a reduction in adolescent self-esteem due to body dissatisfaction (Wardle, 2005).

The family is clearly critical in influencing children's BMI; for example family context appears to be important in reducing obesity if family time at meals is made a priority (Fulkerson, 2007). However, the neighbourhood may interact directly with family influences through the availability of shops selling reasonably priced fresh foods or an abundance of fast-food outlets. Research into the influence of neighbourhood and children's obesity in the UK and the USA has addressed the influence of local fast food restaurants in relation to neighbourhood deprivation. A study in the UK by Cummins (2005) concluded that the greater the level of neighbourhood deprivation the more likely these neighbourhoods were to be exposed to global fast food companies. Studies have found deprived neighbourhoods with a greater prevalence of fast food outlets provide more opportunities to consume food that are high in energy density (Block, Scribner & De Salvo, 2004). A further UK study by Edwards et al. (Edwards, Clarke, Ransley & Cade, 2010) explored the importance of neighbourhood for childhood obesity. Edwards and colleagues concluded spatial distribution of childhood obesity varied, with higher prevalence in the deprived than the affluent neighbourhoods. The importance of neighbourhood safety and fruit and vegetable consumption were associated with childhood obesity in the more affluent areas and expenditure on food, paying for school meals and internet access among the areas of deprivation. This study highlights the complexity of environmental factors influencing childhood obesity. In addition to structural attributes of neighbourhoods such as SES and green space it is also important to consider the social processes within a neighbourhood that influence youth's health and well-being.

2.4 Neighbourhood and social capital

Recent advances in the availability about neighbourhood social interactions are creating new possibilities for moving beyond neighbourhood structural processes to explore the mechanisms through which neighbourhood-level social processes may influence health and behaviour. There is a growing amount of research concerning social capital. For example, the UK Office for National Statistics has delivered a social capital project and guide due to the interest in research which links social capital to better health outcomes, higher educational attainment and lower crime rates (ONS, 2011). There are multiple ways to define social capital and researchers have varying views about how to study this construct. Some researchers have chosen to narrow the boundaries of social capital as illustrated in the work of Veenstra and colleagues (Veenstra, Luginaah, Wakefield, Birch, Eyles, & Elliott, 2005). In this adult study social capital was represented by networks, particularly participating in volunteering associations. Studies that examine consequences of social capital have also been said to capture only a limited amount about the components of social capital (Cooper, Arber, Fee & Ginn 1999). Clarifying the mechanisms involved in social capital theory will improve understanding of the influences on the health of young people within a neighbourhood context.

The main social capital theoreticians are Bourdieu (1984), Coleman (1988) and Putnam (2000). The American social scientist Coleman (1988) emphasised the importance of three types of capital. The first is financial capital examined through family income. The second is human capital e.g. parental education and economic skills, the third social capital which refers to the more social aspects of family life. Pierre Bourdieu's earlier definition of social capital is often overlooked (Morrow, 2001). Bourdieu's (1984) theory contains two elements, social networks and sociability. He emphasised the need for an individual to skilfully maintain their social networks to optimise their resources. Cultural capital is also seen as important and Bourdieu

(1984) described the cultural process across generations, passing through families from parents to children.

Bourdieu and Coleman take an individualistic focus whereas Putnam (2000) emphasised the importance of collective assets in the form of social networks within communities and neighbourhoods. Reciprocity and trust are central to Putnam's theory and he outlined three types of social capital; bonding, bridging and synergy. The distinction between bonding and bridging social capital is well understood (Gittell, 1998). Bonding refers to trusting and cooperative relations between members of a community who are similar in terms of social identity e.g. a church based reading group. Bridging capital refers to connecting with other people or groups who are unlike each other but are equal in terms of power and status e.g. racially diverse groups. Finally the concept of synergy or linking capital is established when individuals who have different amounts of power connect e.g. representation to government by public sector workers and other groups in society such as pensioners (Putnam, 2000). While the three theories of social capital build on each other there are a number of limitations. Coleman's (1988) interpretation emphasises the quantity of interpersonal relations with children but the quality of relationships is also important (Parcel & Menaghan, 1993). In addition none of the theorists explored the influence of how different ethnicity and cultural experiences affect social capital (Morrow 1999). Another gap in knowledge is that studies into social capital tend to focus on poor communities and the research into wealthier neighbourhoods has been ignored.

An interesting element of Putnam's (2000) theory of social capital is the importance of a distinct form of public good embodied in civic engagement. He discussed the importance of voluntary organisations as creating and sustaining social capital to support people in their ambitions to progress. Adolescent volunteering may be an important source of social capital. Volunteering may possible create the psychological connection of adolescents to a community, which could result in feelings of efficacy

and support and may have a positive effect on their well-being and health-related behaviours. This has been demonstrated for adults, with a positive relationship between volunteering and well-being (Mellor et al., 2008) and physical health (Tang et al., 2009). A recent study found adult volunteering affected the decline of depression (Kim et al., 2010) and participation in supervised and organised activities leads to fewer problem behaviours, increased educational attainment and better psychosocial adjustment (Mahoney et al., 2005). A report by the British Youth Council for the UK Government Cabinet Office, concluded that the majority of young people are engaged in both formal and informal volunteering (BYC, 2009). As part of the controversial 'Big Society' (Cabinet Office, 2010) the UK Government launched the National Citizen Service for sixteen year olds with the following statement by the UK prime minister 'National Citizen Service… is a very simple idea that every 16-year-old when they finish their GCSEs should have the opportunity to take part in volunteering in community service and in something that is likely to be stretching and exciting like training with the army on Dartmoor, climbing the three peaks, or climbing a rock face in the Lake District. (p.5. PMO, 2011). Young peoples' interactions with voluntary organisations are different compared to other groups in the population. The Charities Aid Foundation (2002) found young people are not involved in traditional formal charities but are involved in informal volunteering acts such as helping a neighbour or fundraising. Studies about adolescent volunteering require the use of broad questions about young people's voluntary activities to explore the relevance of social capital for adolescent outcomes.

The social capital construct was refined by Sampson, Raudenbush and Earls (1997) in their investigation of the development of delinquency. They proposed neighbourhood social cohesion and social control amongst neighbours and their willingness to intervene when trouble arises locally were essential in reducing the occurrence of physical violence. They suggested linkages of trust and the willingness

to intervene for the common good, which they defined as neighbourhood context of collective efficacy. This developed from the social disorganisation approach developed in the 1940s and 1950s following the work of Shaw and McKay (1942) with an emphasis on disadvantaged neighbourhoods and a focus on social networks. Sampson et al., (1997) proposed an extension to the idea of social ties to underscore the importance of social cohesion and informal social control among neighbourhood residents and the influence on neighbourhood factors and residents' well-being. The research found associations of concentrated disadvantage and residential instability were largely mediated by collective efficacy. Barnes(2007) found that this theory was applicable to the UK; in three different deprived neighbourhoods when there was a lack of shared norms and collective efficacy local parents reported that they were concerned about intervening with any local child behaving in an antisocial manner. The lack of confidence in this 'informal social control' can make the environment more stressful for children who are not engaging in anti-social behaviour.

It is important to consider social capital in relation to adolescents since there are benefits for adolescent health and well-being, not least because children growing up in neighbourhoods with higher social capital will benefit from lower crime rates (Sampson et al.,1997). The pathways and processes through which social capital may influence adolescents may be different compared to adults or younger children. Often research takes a perspective of adolescents as consumers of social capital rather than being its producers. The conceptualisation and investigation of social capital with young people is different for a number of reasons. There is a gap in research about how young people 'socialise in friendship networks, participate in local activities, generate their own connections and make links for their parents' (Morrow, 1999). Many social capital indicators are based on a neighbourhood as a geographically defined area. This is challenging for adolescents as they define a neighbourhood based on places important to them e.g. sports grounds. Morrow (2002) research

describes these areas as '… school, town centre and street, friends and relative houses and sometimes two homes' rather than an easily identifiable geographical location.

Peers are important as a contextual effect of social capital, and are recognised as a crucial social resource for adolescents (Rubin et al., 2010). The idea of 'Peer Capital' as a neighbourhood resource needs further investigation to improve understanding about the effect on adolescents' health and well-being. Putnam's (2000) theory about the importance of the development of social networks is particularly relevant. Friends and the broader cohort within which the adolescent is embedded are both likely to be important in the development of social networks and social assets. As discussed earlier reciprocity and trust are paramount for the development of social capital and the influence of peer social capital requires more attention. A US study by Ryabov (2009) into peer social capital and its importance as a school context for the success of immigrant youth, found the average grade point of peers had a significant effect on children's achievement but the density or homogeneity of the peer network did not. Peer capital may affect adolescent health and well-being in a number of positive ways. Peers may facilitate the adoption or increase the norms of behaviour e.g. physical exercise and exert social control over deviant health related behaviours e.g. illicit drug taking. In addition peer capital may influence youth's well-being via psycho-social processes by providing support, reciprocity and respect.

2.4.1 Ways of studying social capital

A pattern is emerging of studying one or two narrow aspects of social capital in large scale studies e.g. Browning & Cagney (2002). A study used the Chicago community survey (PHDCN; Sampson et al., 1997) and developed a health related collective efficacy measure by aggregating a number of indicators. However there is a lack of more detailed research into social capital from young people's perspectives. Research

by Weller (2010) into social capital and identity in young people highlighted the neglect of exploring the concept from young people's perspectives. The work of Weller (2010) and Morrow (2001) provides detailed accounts from children in the UK, which adds to empirical knowledge. Morrow (1999) argued that social capital research from an adult's perspective assumes children are only influenced by family structure and school. Her critique argued for a wider understanding to think about the role of other contexts such as friends, out of school activities and other community activities. In the USA, Spilsbury and Korbin (2004) recommend studying both children and adults to understand how social capital or collective efficacy may work to influence children's well-being. Their study into the detail of what happens when a child in a neighbourhood needs help, paints a picture of adults and children negotiating a dance. At times the children were resistant to accept adult help perhaps because of concerns of safety e.g. they would rather get help from a mother with a pushchair who is seen as trustworthy; and adults are often unsure whether to help a child due to the fear of retaliation. This research into social capital and children has started to put children at the centre of the investigation into their well-being and places them as active agents who shape the structures and processes around them and whose relationships are worth studying in their own right.

The approach of giving agency to children posits a different way for researchers to understand what constitutes a healthy, supportive neighbourhood. Often research in the area makes an assumption of studying neighbourhood problems and the relationship to negative outcomes such as youth anti-social behaviour and crime (e.g. Sampson et al., 1997). Though this is important, a different approach would contain explicit consideration of positive neighbourhood characteristics to help understanding about the constituents of 'healthy' neighbourhoods. Rather than a problem orientation perspective a wellness orientated agenda (Aber & Nieto, 2000) studying the positive elements in neighbourhoods would be beneficial to promote adolescent health and

well-being. This perspective of a pluralistic neighbourhood theory (Aber & Nieto, 2000) may challenge assumptions regarding neighbourhood social processes. Studies based on this theory would, for example, explore the role of adolescent prosocial behaviour within a neighbourhood context and health and well-being. Studies by Morrow (1999) and Spilsbury and Korbin (2004) have taken a more positive approach to understanding the effects of social organisation and support the view that there is no single standard measure of a healthy neighbourhood, but that neighbourhoods are complex and internally quite heterogeneous and that there tends to be more variability within neighbourhoods than across neighbourhoods (Cook et al., 1997). When researching social capital the measures need to be built from a strong theoretical foundation and include other contexts such as peers and the family.

2.4.2 A Framework for the effects of social capital on adolescent health and well-being

Social capital is hypothesised to affect health and well-being in a number of ways, first at the individual level. Social capital impacts directly on an individual's heath by affecting a person's attributes and activities. A community with more social capital is likely to provide more social support and opportunities for bonding and social engagement. These may positively affect physiological stress responses, self-esteem and health behaviours (Berkman, Glass, Brissette & Seeman, 2000). A meta-analysis of research into the effects of neighbourhoods and child and adolescent outcomes by Leventhal and Brooks-Gunn, (2000) highlighted the importance of social organisation, concluding that its absence results in a range of problems influencing educational, emotional and health outcomes. The effects include internalizing disorders (Xue, Leventhal, Brooks-Gunn & Earls, 2005) and obesity (Cohen, Bower, & Sastry, 2006). These effects are described as 'compositional' health effects of social capital (Veenstra et al., 2005).

Secondly social capital may influence health indirectly through influencing larger environmental factors which in turn influence a community's health. These 'contextual' effects of social capital may affect health by influencing the types of jobs available and housing in the area. Kawachi (1999) suggested social capital is a mediator in the relationships between SES and health.

A third mechanism at a group level is the influence of social capital on population health and well-being. Social capital may affect communities by enabling them to impact on the neighbourhood crime levels and further health enhancing environmental factors including the use of available green space. However most research in this area has focused on disadvantage areas, concluding that neighbourhood characteristics can adversely affect local social capital, in turn affecting health (Cattell, 2001). Therefore few conclusions can be made about social capital and the potentially beneficial effects on health in more advantaged neighbourhoods (Forest & Kearns, 2001). Most neighbourhood studies are deficient in exploring the relationship between social capital and health including the need to study multiple perspectives and research methods including the role of volunteering and peers in developing social capital.

Neighbourhood collective efficacy has been identified as an important mechanism for understanding a wide range of health outcomes among children and adolescents (Sampson, 2003). Neighbourhood collective efficacy has also been associated with anti-social outcomes in adults e.g. partner violence (Browning, 2002) with collective efficacy having a regulatory effect. Studies have found collective efficacy has a protective effect on children growing up in deprived neighbourhoods (Odgers et al., 2009). The levels of informal social control and cohesion within a deprived neighbourhood may help to buffer the harmful effects of deprivation on adolescents. As children mature, neighbourhood effects are likely to be communicated through multifaceted, age dependent pathways (Ingoldsby & Shaw, 2002). Parenting practices

may vary in tandem with the levels of neighbourhood collective efficacy. Rankin and Quane, (2002) suggested there is higher parental monitoring in neighbourhoods with higher collective efficacy and this signalled shared norms and values. This study suggested parental monitoring can be part of living in a socially organised neighbourhood or as a response to neighbourhoods exhibiting more crime and antisocial behaviour and be seen as a protective effect for adolescents against negative peers.

Culture and adolescent ethnic identity may result in social capital being perceived differently and researchers need to be particularly careful when interpreting social capital data within a multicultural environment. Putnam (2000) suggested that in the short to medium term immigration and ethnic diversity challenges social solidarity and inhibits social capital. People living in multicultural neighbourhoods may hold different values and ways of networking and bridging than in other areas. The complexity is further highlighted by studies exploring perceptions of social capital in different cultural settings. Drukker and colleagues (Drukker, Kaplan, Feron, & van Os, 2003) in a study investigating social capital and young adolescents' perceived health in the Netherlands and the US found different interpretations of social capital. Firstly the model in Scandinavia of a caring state aims to prevent various forms of social exclusion for families e.g. housing for underprivileged families are spread throughout a city. In the US (Chicago), they argued a culture of individualism which prizes independence, influences social capital through a housing policy which concentrates disadvantaged families in large housing estates. The authors argued the more mixed Scandinavian neighbourhoods may explain the greater variation in Informal Social Control (ISC) compared to the ISC in Chicago. The authors note the effects of social capital could have been the result of family level control and cohesion rather than neighbourhood social capital which highlights the importance of including as many different contexts as possible.

Adolescents' from different ethnic groups may differ in their perspectives concerning social capital; due to different norms e.g. Asian groups may have strong extended family structures across a neighbourhood. This may results in biased estimates of social capital. Almeida and colleagues (Almeida, Kawachi, Molnar, & Subramanian, 2009) found in a study in Chicago non-Latino whites had a significant higher assessment of the level of social cohesiveness than all other ethnic groups. Examining the different factors involved is important as Subramanian & colleagues (Subramanian, Lochner, & Kawachi, 2003) noted, perceptions of social cohesion may vary from one specific ethnic geographical neighbourhood to another of similar composition. The alternative ways in which young people understand experience and invest in their identities and networks will affect how they respond to bridging and bonding social capital (Weller 2010). More comparative cross-national research would help understanding concerning the mechanisms involved in social capital and influences on adolescent health and well-being.

2.5 Relationships

2.5.1 Parents

A considerable body of research suggests a powerful role for parenting behaviour in predicting child outcomes, especially with reference to anti-social behaviour, alcohol and substance (IAS, 2010; Dishion & Bullock, 2002). The research suggests parenting is also an important moderator of the relation between neighbourhood quality and problem behaviour (Trentacosta, Hyde, Shaw, & Cheong 2009). However, there is disagreement concerning the importance of parenting and its effect on child outcomes (Maccoby 2000). Some studies argue the effects of monitoring in relation to other influences are small (Dick, Viken, Purcell, Kaprio, Pulkkinen, & Rose, 2007). In this Finnish twin family design, the authors studied the role of parental monitoring on adolescent smoking. They found in families with high parental monitoring,

environmental influences were predominant in the etiology of adolescent smoking, but with low parental monitoring, genetic influences assumed far greater importance in predicting smoking behaviour. The authors concluded the aetiology of adolescent smoking varies as a function of parenting.

It has been argued that in disadvantaged neighbourhoods two processes may explain the adverse impact of the neighbourhood on the lives of children. In the first process, neighbourhood characteristics influence families which results in adverse parenting which leads to child behaviour problems, or secondly the stress of family poverty leads to living in poorer neighbourhoods that leads to a potential for child abuse and affects children's well-being (Korbin, Coulton, Chard, Platt-Houston & Su, 1998). Several empirical studies have linked neighbourhood characteristics to harsh and controlling parenting practices. Earls, McGuire and Shay (1994) found that parents who reported living in a more dangerous neighbourhood also reported using more harsh control and verbal aggression with their children compared to parents in less dangerous neighbourhoods. Ethnographic studies have also found parents in low SES neighbourhoods use stringent parenting strategies, such as confining adolescents to the home and accompanying adults on their daily trips around the neighbourhood in order to protect them (Burton & Jarrett, 2000; Furstenberg, 1993). Some studies have concluded that these strategies may benefit young people in poor neighbourhoods (Burton & Jarrett, 2000; Simons, Simons, Burt, Brody, & Cutrona, 2005). The reason for this may be that parents who use harsh discipline keep adolescents away from dangerous neighbourhood activities e.g. anti-social behaviour.

Clearly parents and the wider family are important in protecting adolescents from adverse influences in the neighbourhood. The parental characteristics thought to influence neighbourhood effects on youth are mental health, irritability, physical health, coping skills, and efficacy (Leventhal & Brooks-Gunn, 2000). Two more detailed examples are a study which found high parental responsiveness and high

behavioural control, and low psychological control were generally related to lower substance abuse and delinquency. In the second example, a study found positive associations between high maternal responsiveness and high behavioural control were negatively associated with child problem behaviour (Soenens, Vansteenkiste, Luyckx & Goosens, 2006). The influence of parents on adolescent health and well-being is complex, and clarifying the direct and indirect effect of parents on youth is important (e.g. Lachausse, 2008).

2.5.2 Peer relationships and adolescent outcomes

Families and peers are hypothesised to be two of the microsystems that most often interface between adolescents and neighbourhood (Beyers, Bates, Pettit & Dodge, 2003). Peer relationships are important in adolescent development and indirect neighbourhood effects may be transmitted through peers, particularly anti-social activities (Leventhal & Brooks-Gunn, 2000). Young people's friends and acquaintances, many who are likely to be from the local neighbourhood, can easily undermine the efforts of parents to help children navigate the challenging adolescent years. Social disorganisation theory also suggests that peers may be the primary way through which community socialisation affects adolescents detrimentally (Sampson et al., 1997). The quality of neighbourhood peers is linked to a number of risk behaviours, including drug and alcohol use, criminal activity and contact with gang members (Case & Katz, 1991). Parents influence friendship choices in a variety of ways through normative socialisation, neighbourhood and social selection, advice and guidance as well as through mentoring and knowledge. Collectively studies suggest peer associations represent an important indirect mechanism linking neighbourhood and youth outcomes (Rank & Quane, 2002). It is thought relationships and ties and norms operate together to impact on young people.

2.6 Individual characteristics and adolescent outcomes

In addition to family and peers it is important to review the role of individual characteristics. By early adolescence a young person is able to consider more profoundly his/her own self and the relationship between self and the environment. For the young person there is social cognitive progress occurring within a social context which is marked by a turbulent time. The neighbourhood may impact differently on males and females and different contexts may amplify gender specific socialisation processes (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008). For example living in risky urban neighbourhoods may result in families restricting access to the community for girls compared to boys (Leventhal & Brooks-Gunn, 2004). However the influences are complex and there is disagreement amongst researchers. A study by Parry (Parry, Morojele & Flisher, 2004) in South Africa found that adolescents were drunk more in neighbourhoods where there was easy access to alcohol but reported no evidence of gender differences. Studies in the US suggest the influence of neighbourhood characteristics such as high SES may be more pronounced for boys than girls. The Moving to Opportunity scheme is relevant, in this scheme families from public housing in poverty neighbourhoods are offered the opportunity to move to areas with less than 10% of households living in poverty. Gender differences were examined by a sample of sisters and brothers and the authors argued that adolescent boys are more susceptible to environmental influences than adolescent girls (Leventhal & Brooks-Gunn, 2003).

2.6.1 Adolescent Well-being and Health

2.6.1.1 Definitions

There are considerable challenges for researchers in studying adolescent well-being and health. Academics in the fields of Community, Clinical, Developmental and Qualitative psychology have contributed greatly to the constructs central to this area.

Well-being is often defined as a multi-dimensional construct (Bergman & Scott, 2001) and only a multipronged search for pathways to adolescent health and well-being will enhance our knowledge to improve the lives of children (Cowen, 1994).

A number of global child well-being studies provide a useful guide for studying this area. The World Health Organisation (WHO, 1978; 1999) argued for the importance of considering adolescents' physical, social and psychological well-being as well as their contribution to the well-being of others. This approach identified contexts such as the family and school as essential for adolescents' health and well-being.

A further model by UNICEF (Adamson, 2007) defined six dimensions for child well-being: material well-being; health and safety; educational well-being; family and peer relationships; behaviours and risks; and subjective well-being. The study explored data from 21 OECD countries including Scandinavia, Canada, France, Germany, Poland, US and the UK. The study provided a thorough appraisal of the well-being of children and young people across twenty-one countries of the nationalised world. The report concluded that no single dimension of child well-being stands as a reliable representation for well-being and found several of the OECD countries ranked differently across the dimensions, e.g. the UK and US were in the bottom third for five of the six dimensions (the exception – the health and safety dimension).

A further small qualitative study by IPSOS MORI (2011) studied the contribution of inequality and materialism and children's well-being in the UK, Sweden and Spain. A key finding was the significant difference in interpretation of inequality across the three countries. In the richer country (Sweden) inequality was described as families living in a neighbourhood where they lacked the opportunity to roam free outside. In contrast in Spain inequality was defined as families who work and so have no time for their children. Respondents from the UK perceived inequality in relation to the amount of money and consumer goods a family can have. UK youth were vocal on the

importance of differences in mixed affluent areas regardless of whether they were rich or poor. This is supported by the research into competitive and relative deprivation (Jencks & Mayer, 1990). This highlights an example of the complexity in defining and studying the influences on adolescents' health and well-being.

A further complexity is the unique developmental challenges of adolescence. There are significant changes in the types and frequency of health problems during this period compared to childhood (Holmbeck, 2002). There are two important development transition points, first from childhood to early adolescence and secondly from late adolescence to adulthood (Steinberg, 1996), which influences the effect of individual characteristics on health and well-being. The bio- psychosocial model of adolescent development is helpful to understand adolescent adaptation and adjustment (Holmbeck & Shapera, 1999). This framework includes the major constructs studied by researchers and defines the primary developmental changes as biological, psychological and social redefinition and focuses on two constructs: well-being and health behaviours.

There are multiple influences on adolescent health and well-being and it is therefore critical to consider a variety of contexts. There is disagreement amongst researchers concerning the contexts influencing adolescents' well-being. While some studies argue for the importance of family background and socio-economic status for subjective well-being (Chen, 2006) others have not found associations between SES and young people's health and well-being. A study by Brooks-Gunn and colleagues (Brooks-Gunn, Duncan, Klebanov & Sealand, 1993) found that cognitive and emotional well-being of adolescents was not linked to the percentage of low income families in a neighbourhood but powerfully linked to the percentage of higher income families. This finding is consistent with the contagion and collectivist socialisation theories outlined by Jencks & Mayer, (1990). The differences may be due to different conceptions of health and well-being.

Psychologists studying well-being have focussed mainly on the more easily definable negative outcomes such as maladjustment and emotional and behavioural problems. An alternative model is to consider the positive indicators of well-being. This approach promotes research into optimal levels of adolescent well-being (Peterson, 2006) and the need to look in more detail at factors related to the more positive elements as well as the negative influences of well-being. Research based on the construct of health as an absence of illness has found confusing results. Some youth with few psychological problems still had low life satisfaction (Suldo & Shaffer, 2008). This points to the need for researchers to use multiple indicators for well-being as exemplified in the Canadian National Longitudinal Survey of Children and Youth (Curtis, Dooley, & Phipps, 2010). This survey includes data on youths' health, physical development, learning and behaviours as well as the social environment (family, friends, school and communities).

2.6.1.2 Subjective well-being

An important positive measure of well-being is subjective well-being (SWB) which refers to the self-evaluation of life satisfaction (Robbins & Kliewer, 2000). There are multiple ways this concept has been defined. Diener (Diener, Suh, Lucas & Smith, 1999) proposed that it contains cognitive and affective components. Studies using this dual approach advocate assessing the cognitive component through global judgments of life satisfaction e.g. 'I have what I want in life' (Huebner, 2004). Huebner developed a multidimensional student life satisfaction scale (MSLSS: 2004). The scale operationalises SWB as consisting of three interrelated factors; global life satisfaction; positive affect and negative affect. The affective component is assessed by evaluating the frequency of pleasant and unpleasant emotions. Research has demonstrated life satisfaction tends to be related to positive and negative affect, but they should be viewed as distinct constructs (Lent, 2004).

Another theory, the process-participation model (Cantor & Sanderson, 1999) emphasised the independent contributions of both social resources and personality in predicting SWB. In this model high social resources and positive personality characteristics are likely to lead to more active participation in a person's life which results in higher SWB. This has relevance to the earlier discussion regarding neighbourhood social capital and adolescent networks including volunteering. Thus a pathway to enhancing a young person's well-being may be the types of social support available in the neighbourhood and the individual characteristics of the adolescents and their family.

Social support is a vital factor in the life satisfaction of young people. A study by Scholte and colleagues (Scholte, van Lieshout, & van Aken, 2001) studied social support from family, friends and siblings and found a significant relationship to psychological well-being. An interesting result of this study is that older adolescents with low support from their family but high support from peers caused more problems in the environment and more conflict at home. Young people who exhibited low family and friends support were related to adjustment problems. Therefore when studying well-being within a neighbourhood context it is important to examine multiple constructs including social support in a young person's environment.

While there has been a start in exploring the concept of well-being in young people there are few studies including younger populations; most research is with young adults or students (Vera, Thakral, Gonzales, Morgan, Conner, Caskey, Bauer, Mattera, & Clark, 2008). The existing research into young people and SWB has found associations between SWB and social support, intelligence; parenting style and global self-concept (e.g. Ben-Zur, 2003; Huebner, 2004). A meta review of SWB covering three decades of studies (Diener et al.,1999) found overall levels of SWB across the total lifespan did not reliably vary by gender, social class and SWB may be affected by the exosystem surrounding the developing person e.g. culture. Diener (1999) found in

a collectivist culture (where interdependence is valued more than individuality) family well-being is a stronger predictor of life satisfaction than individual variables e.g. self-esteem. In contrast in individualistic cultures the opposite was true. Little is known about the contextual influences in diverse populations and their well-being (Edwards & Lopez, 2006; Vera et al., 2008).

2.6.1.3 Adolescent health behaviours

During adolescence many critical health behaviours emerge, which affect future disease outcome in adulthood (Williams, 2002). In addition many positive health behaviours e.g. diet and exercise are consolidated and critical health risk behaviours e.g. smoking, alcohol and drug use are first evident (Chassin, Presson, Rose & Sherman, 1996). While it is important to measure subjective well-being in its own right, well-being is likely to also relate to health including risk-behaviours such as smoking and fighting (Bergman & Scott, 2001). Adolescent smoking has been found to be influenced by the neighbourhood context. Research into parenting behaviours, neighbourhood poverty, ethnicity and cigarette use in the US found high levels of neighbourhood poverty were associated with increased frequency and quantity of cigarette use for White but not for Black adolescents (Nowlin, Colder & Craig, 2007).

The contexts affecting adolescents' health are unsurprisingly similar to well-being. Parents and family are important influences. Parental connectedness and perceived parental expectations for school completion are significant predictors of multiple risk behaviours e.g. alcohol, tobacco (Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger & Udry, 1997). Parental support seems to influence health risk behaviours through a variety of pathways including adaptive coping and fewer deviant peer friendships (Wills & Cleary, 1996). Peer relationships have also been found to influence the development of negative health behaviour e.g. substance use (Curran, Stice, & Chassin, 1997). Many of the pathways

vary across ethnicity, age and gender e.g. rates of contraception vary significantly by ethnicity (Moser & McNally, 1991). School is a key context for young people and connectedness with school has been found to reduce the development of risky behaviours (Jessor, Turbin, & Costa 1998). There exists a wealth of research into health behaviours within a neighbourhood context and it is crucial to consider both health risk behaviours as well as health protective behaviours such as eating more healthily and exercise.

2.7 Challenges in neighbourhood research and adolescent health and well-being

2.7.1 Definition and operationalisation of the neighbourhood

As previously noted, a central issue for neighbourhood research is the most useful and appropriate definition of neighbourhood and how to represent this construct when studying adolescents. Nicotera's (2007) research discusses the duality of defining neighbourhood and the need to investigate both the environment and place. In an interdisciplinary review of measuring neighbourhood, Nicotera (2007) presented a critical examination of neighbourhood measures and recommended that there should be two different approaches, measures to represent the environment and others to represent place. Perhaps a way forward is to avoid the false dualism of context and composition by recognising there is a mutual reinforcing and reciprocal relationship between adolescents and place. Aber and Nieto's (2000) theory of a pluralistic neighbourhood theory provides a way forward to examine both the positive elements as well as the more traditional components of neighbourhood factors which influence young people's well-being. The operalisation of the neighbourhood construct is paramount when researching the influences on adolescents' health and well-being.

An important consideration in the operationalisation of neighbourhood is how its characteristics are assessed, which will vary depending on the methods used. Most

contextual studies into health (Cummins, 2007) tend to be data driven from surveys, defining neighbourhoods using administrative boundaries and associated data rather than attempting to operationalize the neighbourhood according to its residents. Measures such as access to multiple owned food shops and the physical quality of the environment with other more traditional measures already outlined e.g. SES, are essential to improving the reliability of research studies. Clearly studying multiple contexts is problematic, if only from the issue of time and cost, however studies need to be designed carefully to ensure the inclusion of representative factors. A way forward is to integrate multiple indicators to investigate the key areas of the neighbourhood and adolescents' health and well-being. Large scale studies have used multiple methods to measure the neighbourhood including census tracts, postal surveys, systematic social observations e.g. videotaping of neighbourhood blocks and quasi experimental methods (NESS, 2012; Nicotera, 2007). An example of a study involving multiple indicators is the Sure Start programme (NESS, 2012) which represented a large scale UK government programme to improve the health and development of young children.

2.7.2 Multiple methods

There is debate about the contribution of different research paradigms including the value of integrating methods (Frost, Shinebourne, Esin, Nolas, Mehdizadeh & Brooks-Gordon, 2011). Research should ideally build upon the perspective of Pluralistic neighbourhood theory (Aber & Nieto, 2000) gaining multiple perspectives through multi-modal methods. However the predominant approach to investigating adolescents' experiences is grounded in 'research on' rather than 'research with' children (Darbyshire, MacDougall, & Schiller, 2005). This ignores the views of young people as active agents in matters related to their well-being. Children are often depicted in research as part of a larger unit, for example subsumed under the family or the classroom. There exists a powerful 'developmentalism' (Burman, 1994) where

young people are seen as lacking the capacity for abstract thinking and would therefore fail to meet the criteria of 'good research respondents' (Scott, 2000). One aim of the present study is to encourage and facilitate adolescents' articulation of their experiences of the neighbourhood and well-being through qualitative interviews. These responses will allow an analysis of the difference and the reciprocity of perspectives and add to knowledge about neighbourhood influences on well-being. Research employing multiple methods can be used to offset the limitations of one method with the strengths of another in analysing complex research problems.

Integrating research methods can also support a closer understanding of the adolescent development process. This will illuminate the complexity of adolescent change and their health and well-being. A robust approach in reviewing research questions and the developmental processes should direct the research methods e.g. the influence of adolescents' perspective of the role of the family and well-being. Through developing an integrated framework results can deliver data which tells us about specific parts of a 'picture'.

2.7.3 Methodological problems

An important methodological problem is the study of causal pathways to health and well-being. The association between low socioeconomic status and poor health is well established (Adler & Stewart, 2010). A useful model, the SES gradient in health details the link between health disadvantages for people in lower socio-economic groups. This graded relationship with health includes individual level indicators (income, occupation, educational level) and neighbourhood-level characteristics (Marmot, 2005; Pickett & Pearl, 2001; Van Lenthe, Schrijvers, Droomers, Joung, Louwman, & MacKenbach, 2004). Research suggests there are a number of problems with different causal pathways for the social gradient in health. Researchers suggest there are two important pathways the first includes health risk behaviours

(e.g. smoking, diet) and secondly differences in psychosocial weaknesses (e.g. stress, social support) (Mulatu & Schooler, 2002). There is a lack of consensus about the relative importance of the two pathways and they may be related to different measures of SES (Jaarsveld , Miles, & Wardle, 2007). A UK study with a large sample of mature adults (age 55-64 years) by Jaarsveld et al., (2007) investigated individual deprivation (measured by education level, housing tenure and car ownership) and neighbourhood deprivation defined by 29 deprivation indicators from the 1991 census. The authors found evidence that the psychosocial pathway was relatively less critical when a neighbourhood measure of deprivation was used, but both pathways were equally important for the individual level measure. The authors suggested individual deprivation might affect health through its association both with unhealthy behaviours and more unfavourable psychosocial characteristics. Although more deprivation does not make a person smoke, eat less fruit and vegetables, or take less exercise, individuals are affected by social circumstances in a way which makes it harder for them to invest in their own health and increases their psychosocial vulnerability (Oakes & Rossi, 2003). It is important to interpret carefully the influence of neighbourhood measures as studies have shown they tap into different underlying phenomena and seem to connect different paths of influence (Ostrove, Feldman, & Adler, 1999; Bradley, Bradley, Cupples & Irvine, 2002; Chen, 2006).

A further challenge is the differences in measures of individual deprivation and neighbourhood deprivation. The UK study (Jaarsveld et al., 2007) noted differences between participants' individual measures and the neighbourhood measure. For example 14% of people in the less deprived individual categories lived in a neighbourhood classified as more deprived and 19% of people from the more deprived individual categories lived in less-deprived neighbourhoods. Studies comparing adolescent individual and neighbourhood deprivation would be valuable as most studies explore adult populations. There may be differences for young people

compared to older members of a neighbourhood in the differences between individual and neighbourhood deprivation measures. Older adults may be less mobile and may stay in a neighbourhood which may change in deprivation level over time. Examining adolescents' responses about their individual deprivation and neighbourhood deprivation may help understanding about the variation in neighbourhood measures. This may be relevant when studying relative deprivation as census data may suggest an adolescent resides in an area of deprivation but the individual neighbourhood measure may be different. In research, where possible, it is essential to include different ways of defining neighbourhood deprivation to improve the robustness of the study design.

Another complexity when researching the influence of neighbourhood contexts is the need to distinguish between the properties of moderator and mediator variables. Often these definitions are confused in research (Baron & Kenny, 1986). Moderator variables such as parenting behaviour are important as contextual factors which may reduce or enhance the influence of the neighbourhood on a young person's health behaviours e.g. parental models have shown a moderating effect for four health enhancing behaviours including eating a healthy diet (Turbin, Jessor, Costa, Dong, Zhang & Wang, 2006). Emotional support from parents has consistently been found to protect adolescents from neighbourhood factors which are detrimental to health and well-being (Lachausse, 2008). In contrast peer support has not been found to be a risk factor for adolescents (Leventhal & Brooks-Gunn, 2000). Research by Windle (1992) into social support and teenagers confirmed family support was a potential moderator variable which was inversely related to depression and delinquency. Contrastingly the authors concluded perceived peer support was not a moderator variable but friend support was positively related to delinquency. This result represents peer support as a suppression effect, having non-significant zero-order correlations with outcomes but showing significant effects in multivariate analyses

(Piko, 2000). Such findings suggest the influence of peer support are complex and may involve several pathways.

Neighbourhood effects on adolescents are more likely to be mediated by peer association (Leventhal & Brooks-Gunn, 2000). This is illustrated in a study by Urban (2010) in Hungary. The author found perceived peer smoking was an important mediator between sensation seeking and smoking. The author discussed smoking was mediated by the peer mechanisms of peer pressure and peer selection. Longitudinal research by Wills (Wills, Sandy, Shinar, Yaeger, 1999) into adolescent substance abuse found adolescent boys who entered peer groups with low parental support, high stress and low academic competence were more vulnerable to rapid escalation in substance abuse than other members of a peer group. The effect of individual differences such as age, gender and ethnic identity, need to be taken into account when clarifying the relationship between risk or protective factors and outcomes variables. Therefore when studying neighbourhood effects it is crucial to clarify where feasible, the pathways through which peers affects young people's health and well-being. The ecological approach to studying neighbourhoods has the implicit idea that neighbourhood influences can be indirect e.g. families influence the effect of neighbourhood resources such as school, which then influences the child; the neighbourhood level of danger may influence parenting within the home.

A further issue is the limited methods used by researchers (Odgers et al., 2009). The majority of neighbourhood research focuses on census level data or parental reports of neighbourhood context. The exclusive use of census tract data narrows the information about the neighbourhood demography and limits the possibility of examining the adolescents' environment from an ecological perspective. The importance of social processes is then missed in this type of design. A further problem is the influence of the research design and its effect on results. Many studies into neighbourhood effects on youth use national census tracts and other sources where

sampling was not designed with neighbourhood influences in mind (Veenstra et al., 2005). A further problem is the relationship between large sample sizes and the possibility of discerning a small effect which is not meaningful (Cohen, 1992; Sedlmeier & Gigerenzer, 1997). Neighbourhood research suggests the influence of environment effects is small to moderate and large sample studies which find trivialising small effects need to be carefully interpreted. It is important for researchers designing neighbourhood studies to consider power analysis to improve the validity of their research.

A critical issue for researchers is the issue of parent and child self-report. The reliance on parent reports is difficult as they typically report on the child outcome (e.g. child's well-being) as well as the predictor (neighbourhood factors). Brener (Brener, Billy & Grady, 2003) discussed the importance in health behaviour studies to carefully assess risks in adolescent self-report. It is essential to consider the factors affecting validity including the issue of social desirability. When using self-report methods with adolescents the possibility of response bias exists, due to the desire for attention, or perhaps the desire to seem 'cool' or 'bad'. In a meta review of 100 studies, Brener et al., (2003) examined self-report for six types of health risk behaviours (alcohol and other drug use; tobacco use; behaviours related to unintentional injuries and violence; dietary behaviours; physical activity and sexual behaviour) and found that they were affected by cognitive and situational factors. These factors do not threaten the validity of self-reports of each type of behaviour equally. Researchers should consider the threats to validity and construct their design to reduce these risks. Pre-testing a survey to assess face validity is one way to mitigate against this problem.

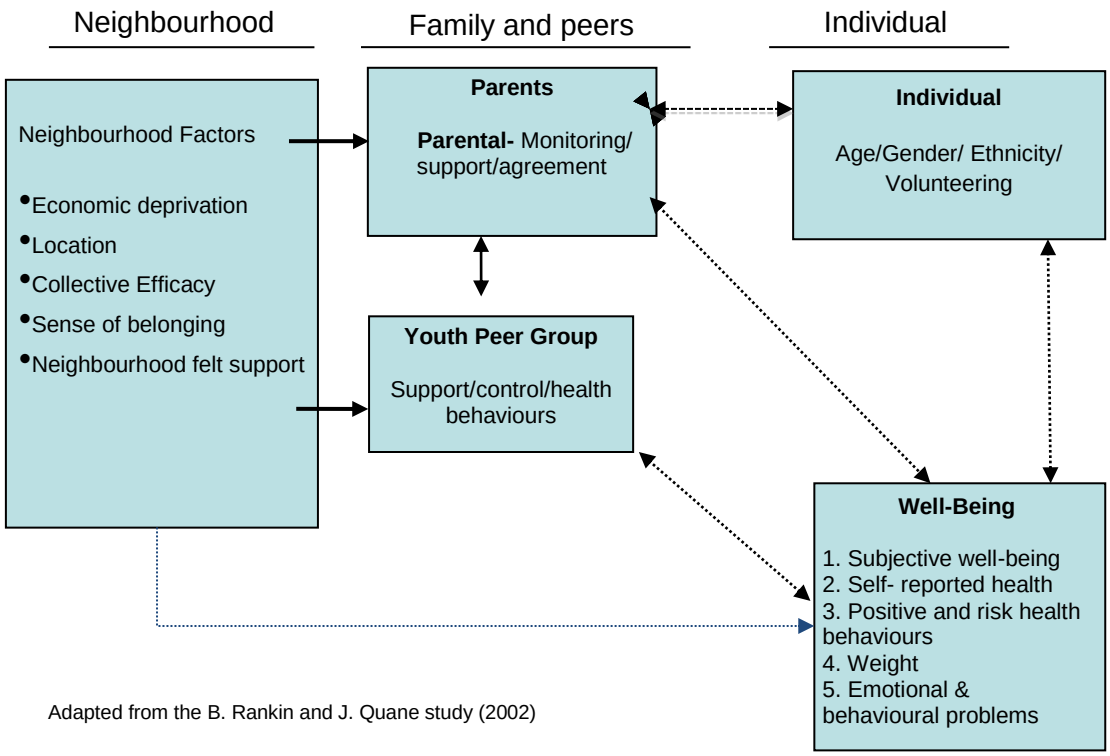
Further measurement problems exist when researching social capital and adolescents. Some of the well-established indicators e.g. trust in neighbours do not have much relevance for young people. Research by Morrow (2002) found young

people located trust and reciprocity in individual close relationships rather than in neighbourhoods. Other studies found 48% of young people aged 11 to 18 would not trust the ordinary man or woman in the street compared to 30% of adults (Mori, 2003). Other differences were found in the General Household Survey (ONS) questions about social capital. The survey in 2000 found differences in the indicators for social capital e.g. 13% of the 16-25 year group responded positively to the neighbourliness score compared to 35% for the 25 year plus group. This affirms the importance of integrating research methods to help deliver a fuller picture of how neighbourhoods impact on adolescents.

2.8 The current study: A multilevel theoretical model of adolescent outcomes

This study is based on the conceptual framework that places adolescents within an ecological perspective (Barnes et al., 2006; Belsky, 1993; Bronfenbrenner, 1979). This approach emphasises the need to look at the interconnections between settings in an adolescent's life e.g. neighbourhood, peers, parents and individual. The research was designed to accomplish this by examining a number of possible influences on adolescents' well-being. Figure 2.1, adapted from Rankin and Quane (2002), summarises the theoretical model for the study, highlighting the relationships between factors and the different levels; neighbourhood, family, individual and peers.

Figure 2.1. A Multilevel Theoretical model of Adolescent outcomes



The study gathered information from multiple perspectives for factors that can potentially influence well-being by adopting a range of data methods. This study followed the less explored approach of combining methodological tools from different psychological disciplines where ontological and epistemological assumptions vary to explore the proximal and distal factors crucial for child outcomes. The research has integrated a number of methods to help understanding of the complexity of constructs effecting child health and well-being, providing divergent as well as convergent data.

One aim was, through qualitative interviews, to encourage and facilitate adolescents' articulation of their experiences of well-being. Their responses allow analysis of the young people's perspectives and add to knowledge about neighbourhood influences on well-being. This approach has been used in response to the suggestion research should be 'with' rather than ''on' young people (Darbyshire, 2000). A qualitative methodology gives a 'voice' to young people across the two locations. Other methods

are surveys with children and parents to strengthen the research, providing a variety of ways of accessing neighbourhood reports.

The research explored collective efficacy from a number of perspectives, including parents and adolescents. Collective efficacy is a group oriented behaviour which is believed to restrain deviant behaviour and enable a neighbourhood to extract benefits for the community (Sampson et al., 1997). A novel element of this research is to ask young people directly for their views of social cohesion and compare this to adults in the neighbourhood, to help understanding of different perspectives and to give voice to young people.

Linked to collective efficacy is the possibility of young people building individual social capital. An innovative aspect of the study has been an investigation of how children interact with the broader community and whether this relates to well-being. One way children can be more involved with the community is through local volunteering. The neighbourhood is relevant to volunteering as many volunteer organisations are placed in the community; they have community origins, roots and connections. The neighbourhood provides a context for volunteer activity and in reciprocal fashion is often directly and indirectly affected by the activities of the volunteers. For example in the disadvantaged neighbourhood of location 1 , a group of volunteers established a trust which facilitated a fund of ten million pounds to build a new school academy and community and sports centres (Marsh Farm Community Development Trust, 2011). However there is little research into adolescent volunteering within a local community context and the effect on health and well-being.

There is a research deficit into the role of ethnicity and volunteering and health behaviours. Fauth (Fauth, Roth & Brooks-Gunn, 2007) found in the USA, white students' breadth of activity participation in 11th grade was associated with lower alcohol use but the reverse was true for black students. Given this, this study will

explore the relationship between young people volunteering and health and well-being within a multi-cultural neighbourhood. Cultural background is thought to influence adolescent subjective well-being. In a variety of international studies (Diener, 1999; Oishi, Diener, Lucas & Suh, 1999) it was argued that in collectivist cultures, family well-being is a stronger indicator of life satisfaction than individual variables e.g. self-esteem.

Finally, the research was conducted in two contrasting locations, one predominantly multi ethnic and deprived, the other more affluent and rural. Comparison within and across neighbourhoods with varying affluence should add to understanding.

2.8.1 Extending the definition of adolescent 'Well-being'

As previously discussed there are considerable challenges for researchers in studying well-being. The term well-being in this study is intended to represent a hypothetical continuum, anchored at the 'wellness' end with an opposing term such as pathology. The well-being concepts and measures in this study relate to investigations of problem behaviour and adverse health behaviours such as drinking and smoking, but also include positive terms such as life satisfaction. While this study does not include physiological indicators of health such as blood pressure, adolescence is a pivotal period of development with respect to health and illness, during which time many positive health behaviours (e.g. diet and exercise) are consolidated (Turbin et al., 2006).

The objective of the study was to examine the interconnections and relationship of factors in adolescent's lives to add to the knowledge of young people's well-being.

2.8.2 Research questions

The **first** gap in the literature is understanding the concept of the neighbourhood from the perspective of adolescents and young people. Further research is needed utilising a variety of methods to examine the qualities within a neighbourhood which influence teenagers' health and well-being. The thesis aims to contribute too reducing the gap in the literature regarding how to represent the construct of the neighbourhood as it is perceived by adolescents. Chaskin, (1997), highlighted the importance of examining the neighbourhood through a lens which investigates social connections as well as the geographical and spatial construction of the neighbourhood. Research examining both the neighbourhood structural and social influences and the interplay of different contexts on adolescent outcomes would support better understanding about the factors important for teenagers' health.

A **second** gap in the literature is attention to the positive aspects of well-being rather than defining it as the absence of problems. The thesis, using multiple methods, extends the concept of well-being by taking a pluralistic theoretical perspective of studying youth's well-being from an orientation of wellness and exploring the underlying pathways within the neighbourhood which influence adolescent well-being. This perspective contrasts to the prevalent perspective in research which has a problem orientation. The thesis views adolescents as active agents, who are able to advance their own healthy development, interacting with neighbourhood contexts crucial for faring well. This translates in the research questions into exploring positive concepts of life satisfaction, prosocial behaviour and positive health behaviours typical of adolescents who wish to keep themselves in good shape (p137) as well as negative influences on well-being such as health risk behaviours and emotional problems.

Researchers studying neighbourhood influences often focus on the negative aspects of the environment e.g. the influence of neighbourhood crime on children's well-being. Aber and Nieto's (2000) Pluralistic Neighbourhood theory provides an approach to redressing this perspective when studying adolescents (Chapter 2, p26). In response to this, the following research question using multiple methods are posited:

- Research question 1 - What neighbourhood phenomena, from adolescents' perspectives, are important for understanding adolescents' health and well-being?

Well-being in the study is represented as a hypothetical continuum, anchored at the 'wellness' end with an opposing endpoint labelled with a term such as pathology. The well-being concepts and measures in the study relate to investigations of psychological adjustment, life satisfaction, prosocial behaviour, positive health behaviours such as adolescents keeping themselves in good shape as well as problem behaviours and adverse health behaviours such as drinking and smoking.

Question 1 is addressed in study 1 by enquiry from the teenagers' perspectives about what were the important things in their neighbourhood for them to have a good life.

Question 2 is addressed in study 2 exploring the influence of structural and social components of the neighbourhood including enquiry into adolescent volunteering and questions about positive aspects of the neighbourhood such as good places for youth to spend their free time.

A **third** gap in the literature is the influence of the neighbourhood structural aspect, greenness and the opportunity for physical activity on well-being. Although a considerable literature exists on adults well-being outcomes from contact with nature, little is known about youths' perspectives about greenness, outside space and physical activity as an important structural contributor to children's health and well-being:

Research questions 3 - What do young people's reports add to our understanding of green space and physical activity?

This question was addressed through Study 1 which explored, from adolescents' perspectives, the qualitative importance of physical activity and opportunities for green space for youths' well-being.

Fourth, there is a lack of studies using a frame of neighbourhood research for investigating, in English multicultural towns and rural villages, the role of ethnicity on adolescents' health and well-being. To explore the role of ethnicity as defined by the adolescents themselves the following research question is posed:

Research question 4 - What is the influence of the ethnic background on adolescent health and well-being? This is addressed in study 2 comparing participants from a multicultural large town and in teenagers from a predominately white rural village.

A **fifth** gap is clarification of the pathways through which different neighbourhood structural and social factors and the micros-system of family and peers with individual characteristics interact to influence adolescent health and well-being. A study in the Netherlands by Drukker, (2003) discussed the need for a multiple-influence transactional model to explain specific pathways for the influence of different neighbourhood factors on children's health. Further studies are necessary through pathway analysis to explore the underlying neighbourhood mechanisms to illuminate the indirect relationships relevant for child outcomes. To address this the following questions are explored:

Research question 5 – what are the underlying processes within the neighbourhood which influence adolescent health and well-being? This is addressed in study 2 by the examination using pathway analysis of the indirect effects implicated in adolescent health and well-being outcomes.

Finally, a **sixth** gap is that to date research studies concerned with the neighbourhood as an important context for adolescent well-being has focused primarily either on adult or youth reports but not on the relationships between parents' and children's perspective of the neighbourhood. A research question exploring agreement between parents and their children about the neighbourhood and well-being contributes to understanding:

Research question 6 – (a) do parents and their children agree about the neighbourhood? and (b) will adolescents in families with more parent and child agreement about neighbourhood collective efficacy report better health and well-being?

CHAPTER 3

METHODOLOGY

3. Aims of the research

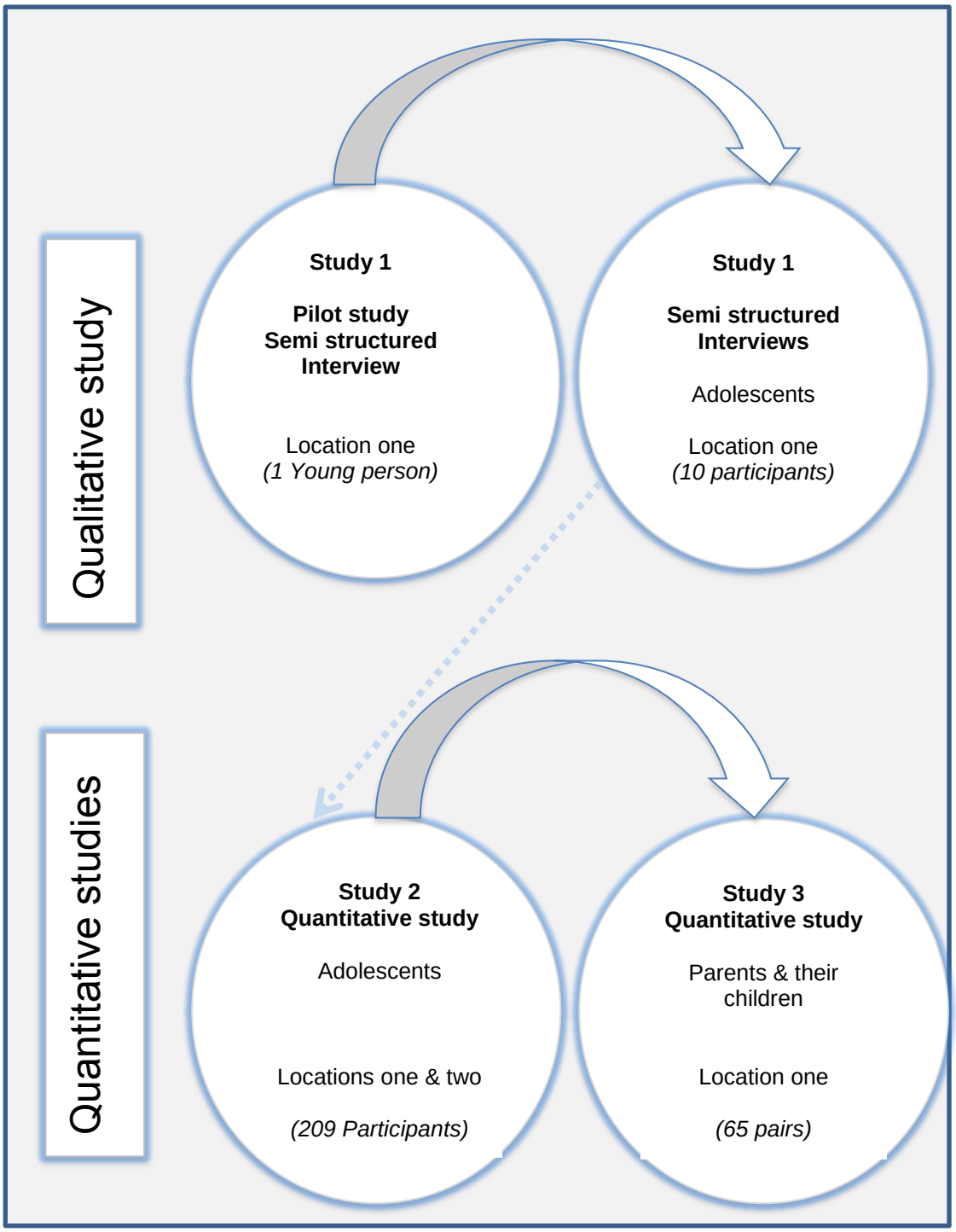
A critical issue was to consider the challenges and limitations of research methods used to identify neighbourhood effects. The majority of neighbourhood research focuses on administrative information, often at the census tract level data or larger units. The exclusive use of census tract data narrows the information about the neighbourhood demography and limits the possibility of examining the adolescents' environment from an ecological perspective. The importance of social processes is then missed in this type of design. This study was constructed to consider the multiple neighbourhood contexts for adolescent health and well-being in keeping with Ecological theory (Bronfenbrenner, 1979). The inclusion of measures of social processes from multiple informants (child and parent) including social capital and peer influences strengthened the design and provided a fuller picture of the influences on adolescents' well-being. A further critical methodological issue is that of parent self-report. When perceptions of neighbourhoods are assessed it is most often from parents e.g. Barnes, 2007; Gonzales, 2010; Vieno, Nation, Perkins, Pastore & Santinello, 2010. The reliance on parent reports poses challenges as they typically report on the child outcome under investigation (e.g. child's well-being) in addition to the predictor (neighbourhood factors). This study avoided this by including parent and child reports of the neighbourhood as well as structural data sets which should improve the validity of the findings.

The research questions were addressed by three studies using different methods, integrating both quantitative and qualitative approaches (see Figure 3.1). A single method cannot provide a sufficient basis for explanation; as Moran-Ellis (Moran-Ellis, Cronin, Dickinson, Fielding, Sleney & Thomas, 2006) argued 'integration denotes a

specific relationship between two or more methods where the different methods retain their paradigmatic nature but are inter-meshed with each other in pursuit of the goal of knowing more'. This study examined the relevance of neighbourhood for adolescent health and well-being and combined and contrasted different research styles which enabled macro and micro level examination of the multiple contexts in a teenager's world. The ontological approach was to place qualitative and quantitative methods as part of a continuum (Caracelli & Green, 1997). The strategy of integrating different methods enabled exploration of adults' and children's perspectives of their neighbourhoods. This provided the advantage of offsetting the limitations of one approach with the strengths of another in analysing complex research problems (Madill & Gough, 2008).

3.1 Design: The cross-sectional study was conducted over four years in two UK schools, location one a multi-cultural town and location two in a more affluent rural village. The locations were selected to provide some variation in measures of deprivation and other structural characteristics. The study was in three parts, starting with a qualitative study of young people aged 14 from location one, to elicit a richer narrative about their perceptions of the neighbourhood; this was followed by study 2, a quantitative study in both locations and finally study 3 a survey questionnaire with a small sample of parents and their children to explore perceptions of the neighbourhood.

Figure 3.1. Overview of the research studies



3.2 Ethical approval

The researcher received ethical approval from both the Local Government's Ethics panel and Birkbeck's, University of London's Departmental Ethics committee (see Appendix A1, A2). Criminal Records Bureau clearance was gained for the investigator

to enable access to adolescents within the school environment. The studies were administered in line with the ethical guidelines and to meet the standards outlined in the Code of Ethics and Conduct (BPS, *20*09). All paper documentation, electronic files, digital recordings, were coded and pseudonyms were used and all documents were password protected. All mention of names or places were removed, in keeping with confidentiality, no individual personal data was shared with anyone. An opt-in strategy was used to identify participants, who gave written informed consent.

3.3 Study 1

The objective of study 1 was to give 'voice' to the teenagers about their thoughts about the neighbourhood, being healthy and what it means for them to be happy and satisfied with their lives. A further purpose was to inform the survey questions in the second study. There are a number of methodological styles within qualitative interviewing and the treatment of data (Ritchie & Lewis, 2010). Thematic analysis was chosen as the research method because the approach reflects reality and enables the unpicking of the underlying psychological constructs.

A sample size for a study employing a thematic analytical approach is often small; a phenomenon only needs to appear once to be of value. Working within a thematic analytical approach required a detailed reading and rereading of interview transcripts and an important consideration in the sampling was the limited human resources available for the project. Sandelowski (1995) argued it is not possible to determine a priori the minimum needed in a thematic analysis sample. Justifications for the sample size in thematic analysis studies varies with Baker and Edwards (2012) suggesting the numbers needed for qualitative interviews ranges from 12 to101. The researcher in the present study followed Braun and Clarke (2006), and their recommendation for small projects of 6-10 participants (Braun and Clarke, 2013). A crucial influence in the approach to theoretical sampling for study 1 was the availability of human resources.

The qualitative study included two components, one a pilot semi-structured interview and ten final semi structured interviews, conducted at the school.

3.3.1 Participants

Study 1 took place in Location one, a school located in a multicultural town. The participants were identified by the school who were asked to identify students at random from year 9. The eleven consenting participants were fourteen years of age and included five boys and six girls. They had either Asian or White ethnic backgrounds, the composition was three Asian and two white boys; three Asian and three white girls. One girl (white ethnicity) was interviewed in the pilot semi-structured interview and a further ten children took part in the final semi structured interviews.

3.3.2 Instruments and measures

Semi structured recorded interviews were considered the most appropriate method to capture adolescents' individual perspectives without the constraint of the quantitative methodological approach. The interview format provides an opportunity to explore emotions and thoughts important to both the research question and the participant. The semi-structured interview structure enabled the participants to relate their stories according to their individual narrative styles and experiences.

Interview topics

Interview schedules were developed to explore the main contexts suggested in research literature important for adolescent well-being (Bronfenbrenner, 1979) and to provide participants the flexibility to discuss what they thought was important for their happiness, in keeping with thematic analysis methodology. Through eliciting a personal narrative it was possible to obtain a rich account of how a young person deals with these issues in their lives. The topics covered were the neighbourhood, family, friends, happiness and health.

3.3.3 Procedure

Written consent was obtained from parents and children. An introductory letter described the detail of the study to canvas interest in their child taking part in the study (see Appendix A3). The information sheets and consent forms were taken home by the children to parents and returned to the school.

The pilot study was conducted with a young person; this enabled the researcher to identify the best ways to introduce topics, to provide information about the logistics for the school, and to assess any risks for the teenager and the researcher in accordance with Birkbeck (University of London) ethical guidelines. The analysis of the pilot study revealed a number of issues which resulted in the following action. To support effective interviews some of the interview questions were changed, e.g. 'what about your family and how you feel about your life' was changed to 'what about your family and your happiness?' A further development was the creation of prompt questions to follow on from the headline question (see appendix A4). This change enabled the interviewer to refer to the interview schedule and prompts and to be sensitive to the participant. It was recorded, transcribed and analysed to identify emerging themes, and the topic guide was amended accordingly.

The pilot and one to one interviews took on average one and half hours and were conducted in a quiet room in the school building. Participants gave permission to digitally record the interviews. The sessions ended with a full debrief. The interviews in addition to providing a rich source of data, informed the surveys in Study 2 e.g. the students did not know the word *'close knit'* which is commonly used in neighbourhood social cohesion questions, this word was replaced with '*people where I live are friends with local people'.*

3.3.4 Data analysis

The anonymised transcripts of the interviews were analysed using Thematic analysis methodology. The researcher made a number of decisions as suggested by Braun and Clarke (2006) about the analysis method which included:

- assessment of what data represented a patterned response relevant to the research about adolescents' health, happiness and the neighbourhood
- less attention was paid to the frequency of a theme and more focus on the importance of themes from the teenagers' voices
- a more detailed account of a number of critical themes rather than a thematic description of the whole data set
- the selective approach to themes enabled the analysis to be more in depth and to manage the complexity
- the style of inductive thematic analysis was chosen in contrast with the theoretical approach which is more analyst driven

The following process in line with thematic analysis (Braun and Clarke, 2006) was carried out for each interview:

- Familiarisation and immersion with the data through listening to the digital recordings a number of times
- The digital recordings were then transcribed with suitable anonymisation. The text was organised to leave a margin for comments and line numbers were inserted to help referencing
- The transcripts were read and reread a number of times, and then the text was coded
- The codes were then grouped into themes e.g. *Personal safety and neighbourhood danger*. The codes across all interviews were then organised into the themes
- The themes were re-examined to check for coherence with the original text

- Finally a report was created which used the significant examples of the participants' talk, discussed the relevance to the research question and the relevant literature e.g. family as a protective factor in dangerous neighbourhoods

3.4 Study 2

The second study involved a survey with adolescents in two UK neighbourhoods, one a multicultural town and the other an affluent rural village, both in the South East of England.

3.4.1 Sample size study 2

To determine the appropriate sample size for the study, power calculations were completed. To calculate a power calculation for study 2, for a desired outcome power of .80 (95% confidence interval) for the sigma value, the most robust measure (used in a variety of national studies) the Strengths and Difficulties questionnaire (SDQ, Goodman, 1997) was used.

A number of substantive research studies were reviewed to ascertain SDQ population means and standard deviations. A study by Lindsay, et al. (2011) compared the SDQ national population (mean = 8.4, SD 5.8) and the mean for at-risk families (mean = 17.9, SD 7.3), a difference of 9.5 points, representing 1.6 standard deviations. An intervention for the very disadvantaged group reduced their total SDQ mean by 3.3 points representing more than half a standard deviation. In the present study it was expected that a difference of half a standard deviation (2.9) would be identified between the means for the children in the deprived and advantaged areas, which for 80% power would require a sample of 170 (85 per group).

The planned sample size based on power calculations was achieved in the disadvantaged area (n=130) but fell short by 6 participants (n=79) in the advantaged location (see Table 3.1).

3.4.2 *Participants*

The sample was organised by the researcher by selecting every third name randomly from a student list in Location one, the multi-cultural town. The participants were fourteen and fifteen years of age, the sample included boys and girls. The total number of teenagers in the study was 209, table 3.1 details the number by year group and table 3.2 gives information on gender by location.

Table 3.1. Children by year group by site (percentages in brackets)

	Year 9	Year 10	Total
Location 1	62 (47.7)	68 (52.3)	130 (62.2)
Location 2	45 (57.0)	34 (43.0)	79 (37.8)
Total	107 (51.2)	102 (48.8)	209

Table 3.2. Child Gender by site (percentages in brackets)

	Male	Female	Total
Location 1	67 (51.5)	63 (48.5)	130
Location 2	41 (51.9)	38 (48.1)	79
Total	108(51.7)	101(48.3)	209

3.4.3 Instruments and measures

The variables/questions in study 2 were selected based on two principles:

- To enable data collection directed by the research questions

- To include robust variables/questions used in repeated studies in the research literature The selection of questions relating to neighbourhood characteristics, including social cohesion supported enquiry into the following research questions:
    a. Research question 2 - What aspects of social and structural neighbourhood characteristics, including both positive and negative components (e.g. social support and deprivation) relate to adolescent health and well-being?
    b. Research question 4 - What is the influence of the ethnic background on adolescent health and well-being? This is addressed by study 2 comparing participants from a multicultural large town and from a predominately white rural village.
    c. Research question 5 – What are the underlying processes within the neighbourhood which influence adolescent health and well-being? This is addressed in study 2 by the examination using pathway analysis of the indirect effects implicated in adolescent health and well-being outcomes.

3.4.3.1 Neighbourhood structural and social characteristics

The selection of questions used in repeated surveys examined the structural and social characteristic of the neighbourhood:

Neighbourhood characteristics - The (10) neighbourhood questions were selected from the questionnaire in the Families and Neighbourhood study (Barnes, 2007) and a Neighbourhood Social Organisation scale (Gorman- Smith, Tolan & Henry, 2000). e.g. '*I like to think of myself as similar to the people who live in the neighbourhood'.* They covered satisfaction with the neighbourhood, neighbourhood safety, sense of belonging to the neighbourhood. The response scale for all items was a 5 point scale from strongly agree to strongly disagree.

Neighbourhood collective efficacy - The (4) collective efficacy questions were selected from the questionnaire developed by Sampson et al., (1997). This scale was originally designed for adults but the adolescents understood the items in the pilot

study. Four items from the collective efficacy scale were used e.g. *'people in this neighbourhood can be trusted'*. Small changes were made to the item *'this is a close-knit neighbourhood'* as the semi structured interviews in study one identified problems with understanding the word close-knit and the item was replaced with *'people where I live are friends with local people'.* The response scale for all items was a 5 point scale from strongly agree to strongly disagree.

Adolescent Volunteering - The (7) neighbourhood volunteering questions were selected from the Youth involvement questionnaire (Brennan 2007). The questions included the types of volunteering e.g. '*helping to raise money for charity',* the amount adolescents volunteered and an open question to capture other voluntary activity. For 5 items the response scale was dichotomous, yes or no. For two items the response scale was a 4 point scale; one item was from not involved in volunteering at all to several times a week, and the second item from no volunteering hours each month to 5 hours or more.

The Indices of Multiple Deprivation 2007 (IMD, 2000) - were used to identify deprivation data linked to each participant's postcode. The total IMD data were published in 2007 based on a range of government administrative data collected in 2005 and are used extensively in research.

3.4.3.2 Health and well-being outcomes

Health and well-being was measured by seven variables to encompass a spectrum which is relevant to youth faring well. The selection of health and well-being questions used was selected from measures used in large-scale surveys in the UK which were relevant to the research questions:

- Research question 2 - What aspects of social and structural neighbourhood characteristics, including both positive and negative components (e.g. social support and deprivation) relate to adolescent health and well-being?
- Research question 4 - What is the influence of the ethnic background on adolescent health and well-being? This is addressed by study 2 comparing

participants from a multicultural large town and in teenagers from a predominately white rural village.

- Research question 5 – what are the underlying processes within the neighbourhood which influence adolescent health and well-being? This is addressed in study 2 by the examination using pathway analysis of the indirect effects implicated in adolescent health and well-being outcomes.

Socio-emotional development – A number of questionnaires were reviewed as potential well-being measures for the study including the Positive and Negative Affect Scales (PANAS, 1988) and the BECK depression inventory (Beck, Steer & Brown, 2002). The Strengths and Difficulties (Goodman 1997) was selected due to its focus on both strengths as well as difficulties and because it has been widely used in the UK and by community researchers (Barnes et al., 2006). The SDQ is a behavioural screening questionnaire for 3 – 16 year olds and contains 25 items (See Appendix A7). Items are scored on a 3 point scale, whether the items is 'not true' (0), 'somewhat true' (1) or 'certainly true' (2). The 25 items are divided into 5 subscales, each with 5 items: prosocial behaviour, hyperactivity, emotional symptoms, conduct problems and peer problems (range for each 0-10). A total problem score is also derived from the four types of problem behaviour (range 0-40), with a normal range 0-15; borderline 16-19; abnormal 20-40. The subscales are scored differently. The prosocial scale is scored separately, normal 6-10; borderline 5; abnormal 0-4. Internal consistency was computed for the SDQ scale using Cronbach's alpha statistics (Cronbach, 1951).

Subjective well-being - To strengthen the well-being measures a well-being ladder was used. Children perceptions of their well-being is an important dimension and UNICEF (Adamson, 2007) in a study into children's well-being explored data from 21 OECD countries including Scandinavia, Canada, France, Germany, Poland, US and the UK and concluded the use of a well-being ladder was an important method to measure subjective well-being. Self-report well-being measures are the subject of much academic debate. The perspective in this thesis is there can be no more direct

or reliable method than asking youth themselves about how satisfied they are with their lives. The author recognised there are many issues which may influence the validity of this approach, including the issue of subjective judgements on well-being may be made in relation to the lives of others e.g. some teenagers may take as their frame of reference the lives of their fellow class mates. This would then result in a distortion in the levels of the well-being ladder. These issues are important and require caution when interpreting the study results.

General Health - The questions about general health behaviours and adverse health risk behaviours were taken from the Multiple Problem Behavior Index (Costa, Jessor and Turbin, Zhang & Wang, 2005) and the WHO Cross-National Study of Health Behaviour in School-aged Children (World Health Organization, 2004).

Self-rated health - The self-related health question was from the Census 'How is your health in general', the report scale was a 5 point scale from very bad to very good

Adolescent weight - a question regarding weight was created specifically for the study i.e. 'What do you think about your current weight?' The response scale was a 3 point scale from underweight, just right, to overweight.

Health enhancing behaviours and adverse health risk behaviours – the questions were taken from the Multiple Problem Behavior Index (Costa, Jessor and Turbin, Zhang & Wang, 2005) and the WHO Cross-National Study of Health Behaviour in School-aged Children (World Health Organization, 2004). The 2 questions about drinking alcohol and smoking asked whether adolescents had smoked and drunk alcohol over the last month. For the (2) items the response scale was a 4 point scale, the drinking scale was from none to 6 or more drinks; the smoking scale from no never to more than a few times. The (3) health behaviour questions asked about whether adolescents felt in a good shape; kept themselves in good health all year round, and had good eating and sleeping habits, with a 4 point scale from definitely not too important to very important.

Antisocial behaviour - The two neighbourhood antisocial behaviour items were created specifically for this study.

3.4.3.3 Microsystem variables

The selection of family and peer questions used was from measures used in repeated surveys and relevant to the research questions:

- Research question 2 - What aspects of social and structural neighbourhood characteristics, including both positive and negative components (e.g. social support and deprivation) relate to adolescent health and well-being?
- Research question 4 - What is the influence of the ethnic background on adolescent health and well-being? This is addressed by study 2 comparing participants from a multicultural large town and in teenagers from a predominately white rural village.
- Research question 5 – what are the underlying processes within the neighbourhood which influence adolescent health and well-being? This is addressed in study 2 by the examination using pathway analysis of the indirect effects implicated in adolescent health and well-being outcomes.

Parent support

Parents are important for children's outcome s (Leventhal & Brooks-Gunn, 2000). Parenting questions were included in study 2 to be able to examine the influence of multiple contexts (family and neighbourhood). Parenting monitoring and support - The parent monitoring questions were from the Positive parent scale (OSLC 1984) which includes 9 questions; 6 were used in this study e.g. '*Are there young people your parent(s)/carer won't allow you to be with?'* The response scale for all items was dichotomous, yes or no. The parental support questions were from items used in the study by Fletcher (2004) and Stattin and Kerr (2000) and 4 questions were used e.g. 'Are your parents interested in what you think and how you feel*?'* The response scale for 4 items was a 4 point scale from strongly agree to strongly disagree.

Peer Support

The (2) questions were established measures from Jessor, Turbin, and Costa (2006*: If you were trying to do something that was bad for your health, would your friends try to get you to stop? If you were going to do something wrong would your friends try to stop you?* The response scale was a 4 point scale from definitely would not to definitely would.

3.4.3.4. Individual Characteristics

Demographic questions were also included about residential tenure, detail about the parent or carer the adolescent lived with, ethnic background, school year, gender and home postcode (see Appendix A6). Residential tenure was divided into 5 categories from under one year to eleven or more years. The details about parent or carer were divided into living with: both biological parents; mother; step family (mother and stepfather); other (single father, father and stepmother, other). Questions were asked about participant Ethnic background. Ethnic background was described by sixteen groups derived from the UK Census definitions (see Appendix A6), reduced in the analysis firstly to four groups and to two categories (white/non-white due to small numbers in most groups). The analysis by ethnic group supported enquiry into the following Research question:

Research question 4 - What is the influence of ethnic background on adolescent health and well-being?

Age was measured as a continuous variable in years and then coded into two age categories – 14 and 15 year olds. Postcodes were collected to determine the neighbourhood structural data from the lower layer super output area (IMD, 2000).

The final questionnaire consisted of eleven sections (see Appendix A5) for a copy of the questionnaire). The topics covered:

1. Peer protective health modelling behaviours – the (3) questions were established measures from Jessor, Turbin, & Costa (1998) protective – risk conceptual framework e.g. *'If you were trying to do something that was bad for your health, would your friends try to get you to stop?' the 4 point response scale was from no healthy behaviours to all of them.*
2. The (2) neighbourhood antisocial behaviour items were created specifically for this study e.g. '*In the past month have you had a fight with someone in the neighbourhood that involved physical violence?' The response scale was dichotomous yes or no.*
3. Subjective well-being - To strengthen the well-being measures a well-being ladder was used in this study as an additional measure to the SDQ questionnaire and the questions on health behaviours. Children perceptions of their well-being is an important dimension and UNICEF (Adamson, 2007) in a study into children's well-being explored data from 21 OECD countries including Scandinavia, Canada, France, Germany, Poland, US and the UK and concluded the use of a well-being ladder was an important method to measure subjective well-being. A picture of a ladder included details on how to complete the exercise: *'the top of the ladder is the best possible life for you and the bottom 0 is the worst possible life for you',* (see Appendix A8).

Independent information about the neighbourhood

The Indices of Multiple Deprivation 2007 (IMD, 2000) were used to identify deprivation data linked to each participant's postcode. The total IMD data were published in 2007 based on a range of government administrative data collected in 2005. The statistics are built from small geographically areas called lower layer super output areas with an average population of 1500.

3.4.4 Procedure

Meetings with Local Authority personnel facilitated access to secondary schools in the areas. Letters of introduction were sent to a number of Head teachers and two schools (one within each area) agreed to support the study. The objective was to collect a sample of 200 adolescents in Years 9 and 10.

Recruitment material contained a summary of the study and encouraging participation in the study was sent home with all children. Two weeks later a random sample of children was selected by nominating every third name on the class list for years 9 and 10 at the two schools. Information sheets and consent forms were sent to the random sample of families. Due to the children being minors, dual consent was required from parents and children. Signed consent forms were returned directly to the schools, which were then passed on to the researcher. Research sessions were then organised with the school.

The questionnaires were numbered and administration took place in classrooms at the school to groups ranging from 7 – 28 children. There were 11 sessions in total, 7 at location one and 4 at location two. Each session started with the researcher introducing the study and explaining the purpose of the study, reemphasising confidentiality and the detail of the measures, the investigator finished each session with a debrief. The researcher also checked that the students continued to consent to take part. The order of the completion of the three elements of the study (SDQ, Questionnaire, Well-being ladder) was counterbalanced (ABC, BCA, CBA). A protocol was used for all groups so the process was similar for all children (see Appendix A9. The adolescent questionnaire took approximately 40 minutes to complete, the SDQ (Goodman, 1997) 25 minutes and the Well-being ladder (UNICEF, Adamson, 2007) took about 5 minutes to complete. A teacher was present throughout the sessions. The students were asked to answer questionnaire and SDQ questions as honestly as

possible and not to spend too much time on any one question. A large poster sized example of the well-being ladder was held up and the researcher discussed how to complete the ladder, students were asked to tick the number that best described how satisfied they were with their life at the present time.

3.4.5 Data analysis

The responses to the questionnaires, well-being ladder and government statistics were analysed using the appropriate statistical techniques.

The approach to analysing the data involved a number of steps. First descriptive statistics were calculated for each item: the measures of central tendency, standard variances and graphical representation to characterise the data sets. Individual participants' item score where then aggregated to calculate a broader psychological scale e.g. neighbourhood sense of belonging: aggregation of items 2,5,6,7. The scales were analysed using reliability statistics to determine a robust scale. The items were replicated from standardised questionnaires and therefore the scales were interval data; this approach is extensively supported in the literature e.g. Norman, 2010; Gorard, 2003.

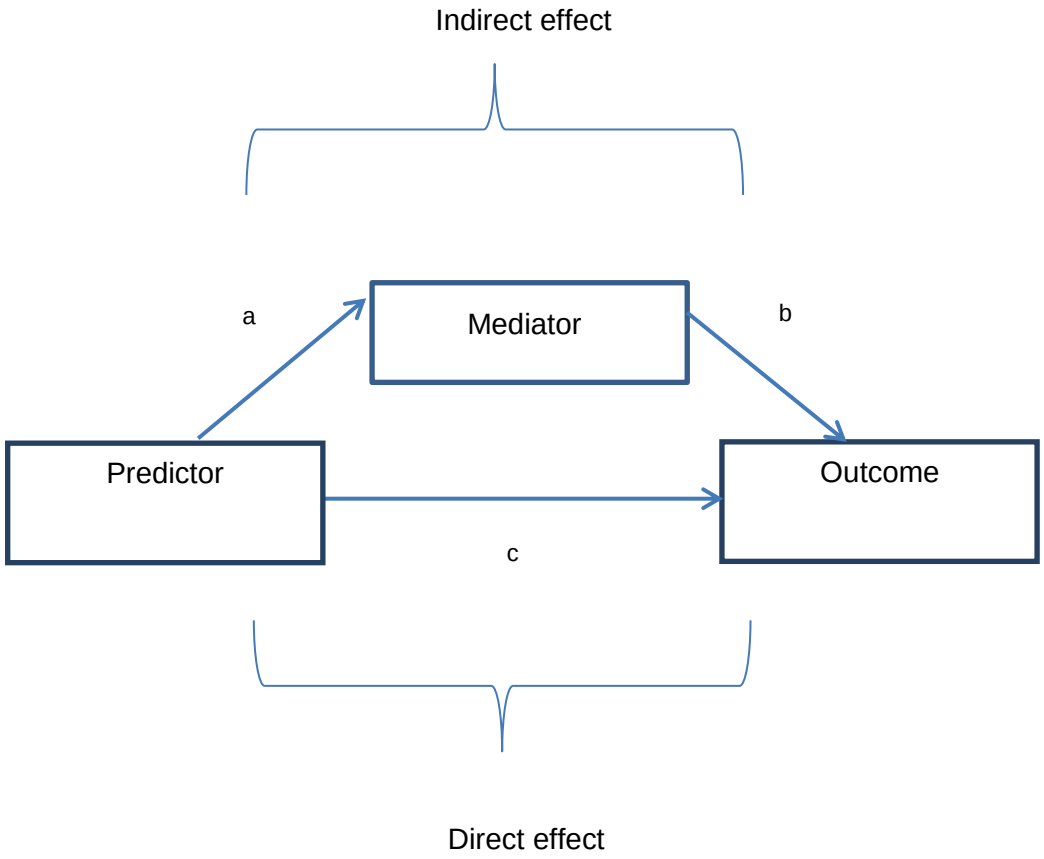
A significant testing of groups by location was undertaken as the researcher was interested in comparing the differences between the multicultural urbanised town and the rural village. Chi square tests and t-tests were calculated for the individual characteristics and for location. The objective of this approach was to explore further the potential influence of place on adolescents' health and well-being.

The next step in the analysis was to examine the relationship between the independent variables (neighbourhood structural and social characteristics; parent and peer support), and health and well-being outcomes. Pearson correlation statistic was used to compute bivariate correlation coefficients.

Multiple linear regression was selected to test the theoretical model and to analyse factors affecting adolescent outcomes. The order of entering the factors was based on ecological theory (Bronfenbrenner, 1979) first, the structural and social neighbourhood variables, followed by peers and family factors. Finally individual characteristics e.g. gender. Constructs entered into the regression models were those that had been identified as having a significant relationship with the dependent variable in correlational analyses. Assessment of regression assumptions, casewise diagnostics (criterion value set at 2) and analysis of multicollinearity revealed no problems.

The mediating influence of different factors was explored to determine the direct and indirect effects on child outcomes. A mediation model was used to estimate the indirect effect and the significance value. The direct and indirect effects are illustrated in Figure 3.2. The indirect effects are the combined effects of paths a and b. The significance of the effect was assessed using Sobel test (Sobel, 1982). If the Sobel is significant the predictor significantly affects the outcome variable via the mediator. Confidence intervals were computed using boot strap methods. The number of bootstrap samples was set at 1000. A statistical package Process (Hayes, 2013) was used to analyse the mediation effects. Kappa squared (Preacher & Kelly, 2011) was also computed, this statistic expresses the indirect effect as a ratio to the maximum possible indirect effect given the design of this study. Kappa squared can be evaluated as follows: .01 is a small effect; a medium effect would be around .09 and a large effect in the region of .25 ((Preacher & Kelly, 2011).

Figure 3.2 Diagram of a mediation model.



3.4.5.1. Data Audit

To improve data integrity an audit was carried out:

1. Frequency tables were used to ensure all inputting matched questionnaire upper and lower Likert scales.
2. An audit by an independent researcher of 10% (1155 fields) of the data was carried out. An analyst input the audit data into an Excel file which was compared with the researchers inputting. The comparison resulted in 4 incorrect researcher inputs. A review of the mistakes found the inputting involved one level up or down on the Likert scale. The base data set was corrected to remedy the mistakes.

3.5 Study 3

The third study involved a survey in location one with parents of children involved in study 2. The aim of this study was to explore the views of parents about the neighbourhood structural and social characteristics, parenting and to compare these perspectives with their children. The addition of an additional perspective other than teenagers about the neighbourhood and parenting strengthens the research.

3.5.1 Sample size study 3

To determine the appropriate sample size for the study, power calculations were completed. To calculate a power calculation for study 3, for a desired outcome power of .80 (95% confidence interval), the measure of Collective Efficacy was used, a measure used in a variety of studies (Leventhal, 2000).

A study by Lindstrom Johnson et al., (2011) in a violent neighbourhood in the US reported for parents a collective efficacy mean of 32.3 (7.35, s.d.) and for youth a mean of 32.10 (5.53, s.d.). The difference between parents and youth for collective efficacy was 0.23 (1.82 s.d.). In the present study a smaller variation in the standard deviation (.42) was expected between the parent and child sample. In the Lindstrom (2011) study the range for parent collective efficacy was 10-50 and for youth 19-44 and the children attended an urban middle school on probation for persistently dangerous status, located in neighbourhoods characterized by violence. Location one in the present study, was a mainstream school located in one of the 10 percent most deprived areas based on the Indices of Deprivation (2010) but the crime level was similar to other urban towns (Police UK, 2015) The researcher estimated the difference between the standard deviations for this study's samples of parents and their children would be lower. A power calculation was computed and for 80% power the sample required was 152 (76 per group).

The researcher planned to recruit a sample of 76 parents, however despite extensive time and effort to increase the size of the sample (see section 3.5.1) the sample size of 76 for parents was not achieved and fell short by 11 participants (n=65). This study is therefore exploratory and the limitations of interpreting the results are discussed in the limitations section (see section 7.13, page 224).

3.5.2 Participants

The total potential sample was 209, representing parents who agreed that their children could be part of study 2 but only a small proportion of parents agreed to take part in the study (n=65).

3.5.3 Instruments and measures

To examine whether there were differences in the responses about the neighbourhood, collective efficacy, parental control and knowledge, a number of items were duplicated in the parent and adolescent questionnaires. The study was designed to explore these items and to explore agreement between the adolescents and parents and the relationship to neighbourhood deprivation data and the adolescent health and well-being outcomes.

The parent questionnaire (see Appendix A10) comprised of four sections:

1. Neighbourhood characteristics – The (10) neighbourhood questions were selected from the questionnaire in the Families and Neighbourhood study (Barnes, 2007) and a Neighbourhood Social Organisation scale (Gorman- Smith et al. 2000). For the 4 neighbourhood quality questions e.g. ‘How do you feel about your neighbourhood as a place to live?’ The response was on a 5 point scale from excellent to very poor. For the 6 items about neighbourhood sense of belonging and felt support e.g. ‘I like to think myself as similar to the people who live in the neighbourhood.’ the response scale was dichotomous yes or no.

2. Neighbourhood cohesion - The social cohesion questions were selected from the collective efficacy scale developed by Sampson et al., (1997). Four items from the collective efficacy scale were used e.g. *'People in this neighbourhood can be trusted',* the response scale was dichotomous yes or no.
3. Social informal control. The social informal control questions were selected from the collective efficacy scale developed by Sampson et al., (1997). Four items from the collective efficacy scale were used e.g. 'What is the likelihood that your neighbours could be counted on to intervene if children were showing disrespect to an adult?' The response scale was dichotomous yes or no.
4. Parenting monitoring - The parent monitoring questions were from the Positive parent scale (OSLC 1984) which includes nine questions; seven were used in this study e.g. '*Are there children you won't allow your child be with?'* The response scale was dichotomous yes or no.

3.5.4 Procedure

Two methods were used to recruit parents. The first approach involved the adolescents who previously took part in study 2, taking home a recruitment flyer about the study and about Saturday sessions at the school community library when parents could complete the questionnaires (see Appendix A11). The recruitment flyer included information about an incentive of a supermarket voucher of £10.00. A total of 130 packs containing information about the study were posted to parent homes. This resulted in only one response from a parent attending one of the two Saturday sessions held at the community library.

The second approach involved a postal questionnaire (see Appendix A12) which was sent by the school to homes of parents who had previously agreed for their child to take part in the study. The postal packs (129) included a stamp addressed envelope to return the questionnaire directly to the University. This prevented parents being

concerned about returning the questionnaires to school, as they may have been uncomfortable to share data with the school. The packs included information about the £10.00 supermarket voucher representing a thank you for taking time to complete the survey. The first postal campaign resulted in 49 completed questionnaires, a response rate of 38%. To increase responses, a third campaign was organised this time with an increased supermarket voucher of £20.00; 79 packs were posted. This resulted in a further 15 completed parent questionnaires, a response rate of 19%. The total number of parent questionnaires was 65, an overall response rate of just over 50%. A thank you letter and the supermarket vouchers were sent to the parents' homes.

To ensure data matching between the child and their parent questionnaires the following system was followed. The parent questionnaires were numbered with the same identifying number as their child's questionnaire. A log was created and as parent questionnaires were returned they were collated with the child questionnaire. An audit included a check of the addresses on the parent and child consent forms were carried out to ensure a match.

3.5.5 Data analysis

The responses to the questionnaires were entered into a data file and then merged with the children's file to create 65 pairs of parents and their child's responses. Parents and their children responded to a number of identical questions concerning the neighbourhood and parent-child responses were compared. Note: that for some questions the children provided five response options but parents were only asked for a yes/no response. Child responses 1 and 2 were recoded as no, responses 4 and 5 as yes and response 3 input based on other questions.

To explore different perspectives of parents and their children, first descriptive statistics were calculated, and then t-tests were calculated to inform the agreement

about the neighbourhood. Further analysis using tests for association (bivariate correlation), determined the structure of regression analysis, to inform research question 6 – (a) do parents and their children agree about the neighbourhood? and (b) will adolescents in families with more parent and child agreement about neighbourhood collective efficacy report better health and well-being?

3.5.6. Scale Reliability

Internal consistency was computed for the SDQ scale (see Table 3.3) and for both the adolescent and the parent questionnaires to ensure psychometrically robust scales for subsequent analyses using Cronbach's alpha statistics (Cronbach, 1951 (see Table 3.4 and Table 3.5). Comparing the reliability scales for the adolescent sample in study 3 (the parent and child study) to the sample in study 2, the adolescent study, (see Table 3.5), the reliability scales for neighbourhood sense of belonging and parent involvement were similar; the adolescent collective efficacy scale in study 3 was higher than the full sample (α .83 versus α .70)

Table 3.3 Reliability of adolescent psychological adjustment scales (N=209)

SDQ conduct problems	5	5,7,12,18,22,	0.42
SDQ emotional symptoms	5	3,8,13,16,24	0.27
SDQ Hyperactivity	5	2,10,15,21,25	0.42
SDQ Peer problems	5	6,11,14,19,23	0.03
SDQ Prosocial	5	1,4,9,17,20	0.03

To explore the different perspective of parents and children about the neighbourhood and parental involvement, descriptive statistics were calculated and are detailed in the results Chapter 6. Pearson correlation coefficients were computed to compare parent and adolescent responses and an agreement/difference variable was created by subtracting the child score from the parent score. All variables were at the interval level except for gender and ethnicity at the categorical level.

Table 3.4 Reliability of Adolescent Questionnaire scales and child outcomes (N=209)

	No. of questions	**Survey question**	**Cronbach's Alpha**
Neighbourhood sense of belonging	4	2,5,6,7	0.69
Neighbourhood Collective efficacy(social cohesion)	4	9,12,13,14	0.70
Neighbourhood felt support	3	8,10,11,	0.74
Neighbourhood Volunteering	4	15,16,17,18	0.61
Parental Support	4	22,23,24,25	0.78
Parental Involvement	6	26,27,29,30, 32,33	0.59
Peer support	2	49,50	0.85
Peer positive health modelling	3	46,47,48	0.77
Neighbourhood antisocial behaviour & crime	2	39,40	0.57

Adverse health risk behaviours	2	35,37	0.67
Enhancing health behaviours	3	43,44,45	0.82

Table 3.5 Reliability of Parent questionnaire scales and the matched adolescent sub-sample scales (n=65)

	No. of questions	**Cronbach's Alpha Parent**	**Cronbach's Alpha Adolescent**
Neighbourhood sense of belonging	3	α .81	α .66
Neighbourhood collective efficacy	4	α .64	α .83
Neighbourhood informal social control	4	α.89	n.a.
Neighbourhood felt support	4	α .73	α .73
Parent involvement	4	α.26	α.57

Multiple linear regression was used to analyse factors affecting adolescent outcomes. The order of entering the factors was based on ecological theory (Bronfenbrenner, 1979) firstly the structural neighbourhood variable, then the collective efficacy agreement/difference variable, followed by peers and family factors. Finally the individual characteristics of volunteering, gender and ethnic back ground were

entered. SPSS version 20 was used for all analyses for Study 2 and Study 3.

CHAPTER 4.

QUALITATIVE STUDY 1 RESULTS

4.1 Introduction

The purpose of this qualitative study was to provide an idiographic perspective of adolescents' experience of health and well-being and their neighbourhood within a UK multi-cultural neighbourhood and as a precursor to finalising the quantitative survey questions. The study was designed to support understanding for the following research question:

- Research question 1 - What neighbourhood phenomena from adolescents' perspectives are important for understanding adolescents' health and well-being?
- Research question 3 - What do young people's reports add to our understanding of green space and physical activity? The study involved recorded interviews, conducted at school with ten adolescents aged fifteen attending a UK secondary school, with an equal number of girls and boys.

Thematic analysis of the interviews (Braun, 2006) revealed six master themes. The master themes were:

- Factors affecting happiness
- Physical activity and the physical nature of the neighbourhood
- Personal safety and neighbourhood danger
- Neighbourhood and community cohesion
- Parent and family support
- Friends' support

4.2 Factors affecting happiness

The interviews provided revealing insights about what was central to their happiness, including the importance of family, social comparison and the difficulty in sustaining

positive feelings. The adolescents talked about issues which affected their happiness such as exam pressures, playing sport with friends, being healthy and their religion.

> Josh: 'I think I've got a better life than most people around me… I think that's why I'm satisfied with the things I get and what I've got at the moment so … I can't really moan about anything. Another good way to be happier is having your health, so not having any major health issues.'
>
> Amy: 'I would say at the moment quite high. Well I have friends in older years who they pressure about exams, pressure from school as you get older it is really stressful, I took some exams earlier this year and after I finished those exams … and they're really, really stressful and when you get stressed from one exam and you've got another exam the next day it's like building up and building up. So I would say the stress and pressure from exams almost stops me from doing stuff like photography, being with my friends, because I dedicate so much of my time to that, to make sure that I am not as stressed. And the other reason is my mum and dad they leave me to my own devices. They never have to nag me about school work but my brothers do need nagging. They tend to use my mum and dad's attention and there is the pressure from my exams and the fact that at home it's a bit, a bit chaotic.'
>
> Jack: 'I'm quite happy with my life at the moment and there's not much I would change about it, doing more things that interest me make me happy, just sort of playing sports and doing other things I like….things that make me happy are sort of the family, friends… things like that. Also just being able to do other things that other people can't do like.. I get to go to places where other people can't go and I think it makes it worth living.'
>
> Keshawn: 'Like last week we went to the park and there was about ten of us there, we had a cricket match er, … and I'm just like really happy. It's just like

there's a smile on your face and then … the rest of your day sort of goes good cos you're in a good mood and then you like you don't really get angry as much.'

Eugenie: 'My life satisfaction is high…. I think I need to be settled, get a job and things, I do think my life's quite good. It could improve like the area I live in and like to live in a bigger place, its more the area, I'd give myself a perfect score. Also my religion. I'm a Christian, it's quite important to me that even when like I need someone to talk to, you might not hear a reply back from God, but you still feel safe someone to hear you, important for my life… it affects my everyday life… in lots of ways its uplifting, you always know someone is there…'

A small number of the adolescents spoke about the relevance of helping others to life satisfaction.

Louan: 'A good life for me is helping others.'

Alisha: 'To make me happier I maybe do something that makes a change. Something I've always wanted to do is something that would make a difference to someone else's life. I was in charity work at one point but I know it doesn't pay well …. but if I can make a difference, make a change, to make things better … If I seem someone on the street like when they're selling Big Issue I always go buy one. People ask me but why? I goes, they're trying to do their best to get off the street at least there not sitting there waiting for somebody to take them. So I'd rather it be a protective world rather than one that's lazy.'

Three of the adolescents varied in whether their long-term happiness involved leaving their current neighbourhood, but only Emily had a strong view that improved

happiness would involve a new environment. Others cited the presence of family members as a reason to stay in the local area.

> Emily: 'I don't know if they are dreams, but a lot of things I want to achieve in life. I want to go beyond [Town], I don't want to be stuck in [Town], I feel [Town[is very limited and there's a lot of things to do outside [Town]. And I want to experience that, I don't just want to be just left here, to say I grew up in [Town] and done this and that. I want, I want to set, I want to um I want to leave this town…. not necessarily leave [Town] and just go away and not come back, I want to go and experience more outside of [Town] and I just don't feel I can do as much as I want to do here.'

> Louan: 'When I grow up I wouldn't move from the [Town], I'd like to stay near my parents. I'd get a new home obviously, live near, not to close to my family.'

> Lingham: 'Yeh I might leave [Town], cause uh my Nan is not from here she's from [different town], but my Dad says if you want to live in [Town] you can live in [Town]. If you want to live in London, live where you want. But I think I will stay in [Town] with my mum. Because my mum really loves me, and I really love my mum, so when I get older I want to take care of mum.'

The teenagers also discussed that happiness was sometimes not sustainable, and identified factors that made this more or less likely:

> Lingham: 'The day starts so good, amazing then you think about a time it wasn't so good. One little thing can knock you off.'

> Jack: 'er… it's just like there's a smile on your face and then er.. the rest of the day sort of goes good cos you're in a good mood and then you don't get really angry as much.'

Josh: (watching a neighbourhood football match), 'You're sitting in your seat just holding on… just heart in the mouth moments… and it's so real…it's like the earth stood still when we lost… we just.. you've got to get over it I mean.. if you don't get over it then you're not going to get anywhere really and you have to get over things to start new things so that's the way I see it…. and after it's just all the pain's gone off your shoulders and all like stress is off your shoulders.'

4.3 Physical activity and the physical nature of the neighbourhood

The respondents identified an important link between sport and health and a sense of striving to maintain health and stamina. Involvement with physical activity represented more than a way to improve health, it was also important for self- identity, and for spending time with friends and family. Some but not all of these activities took place in the local neighbourhood.

Louan: 'I do boxing, you hit boxing bags, we spar we shadow box, we do loads of press ups and all that. Keeps you healthy and fit and you keep up your body strength. You need it to be a better person.'

Josh: 'Swimming I would say just keeps me fit… it'll get my stamina up and make sure I stay with my health. I'm a swimmer, I swim nine times per week.'

Amy: 'Mum and I started horse riding, so horse riding is what I do with my mum. It's a bit of exercise and I get to do it with my mum so you can be with your friends and family. So when I find stuff, I'm not artistic but I like photography but I'm not very sporty, but I like horse riding just finding little hobbies is what I enjoy.'

Alisha: 'Me and my dad have this bonding experience when we go fishing , umm people say that's a father and son thing, but I've always kind of enjoyed

it, it's kind of peaceful so, I really enjoy it with my dad and we do a lot together.'

Eugenie: 'I like jogging in the mornings with my granddad. Also like athletics, 100 metres and the shot-put. It's good to see in competitions if you beat yourself, how fast can you run, so you set targets.'

Several of the respondents noted how the nature of their neighbourhood had relevance for physical activity, which is important to their health and well-being.

Kisham: 'I think the area where I live is good, I got a park near me but the only thing is the crime and stuff that…and people litter quite a bit but that's it… I go out of my house I've got a park there like a few houses behind my house.'

Alisha: '[local] Lake, we normally go in the summer, there's a big field behind, and we like always have a certain place to go to. It's just like a plank of wood over the water with like bushes and reeds on this side and then a tree this side that like comes over to shade you a bit and then it's got the path behind you where people just walk and then you've got the big field and woods at the back and.. pretty much just play Frisbee back there.'

Jack: 'Friends and I, we like to go to a field that's just outside my house which me and my other friend live near so we just sort of like…all the other people come and we play football there…it's quite good.'

Amy: 'I really like this area, actually most people don't know it's there, but its cornfields, loads as far as you can see there's just cornfields. Recently my dog went running off around there and I had to go chasing after her and then there's this cornfield I never knew about So I've been going round there quite a

lot now with the dog cos she loves running around the cornfield. It's just really quiet and it's just a massive amount of space and it's pretty much empty.'

Josh: '[In a nearby neighbourhood] they've just got like you know…they're getting a new swimming pool …they've got loads of little football pitches…they've got some brilliant parks up there…so you know…that's…and down here I think we've got just one park and this Astroturf.'

Louan: 'I'd like for the main road to be changed outside my house, when on my bike you can't cross the road, cars passing by all the time, constantly.'

4.4 Personal safety and neighbourhood danger

Several of the respondents discussed the importance of being safe in a dangerous neighbourhood and their feelings of anxiety related to their personal safety, both at home and when out and about. The adolescent highlighted the concerns and complexity for young people living in a neighbourhood characterised with crime and antisocial behaviour.

Josh: 'We got burgled one year and… so I was really worried that it was going to happen again so every night now I just make sure the front doors locked so that no-one can really try and get in.'

Lingham: 'At night time people are really scared, they go you live in [neighbourhood] they are really scared of the place. Cause there has been stabbing incidents here and all that. I have been living in this area for six years. I don't feel scared here.. nothing has happened to me, so I'm not scared.'

Keshawn: ‘You just got to be careful…. Um, just don’t go round and if you see someone that looks a bit weird don’t go near them and if possible get home as quick as possible…cos they can do anything.’

Emily: ‘Well in the neighbourhood there are different parts, I live on sort of the outskirts of the neighbourhood, I’m not really in the middle or at the beginning but it’s like there’s quite a lot of.. I don’t know what to call it like gang wars is it? There’s quite a lot of that going on at the moment around town and a couple of people who live at the beginning of my neighbourhood are with the town gang and another gang means I live in the middle between the two. But I don’t really go out of my house much except if I go out or go to school or something. I so don’t really witness a lot of it, but I guess it just worries you to think you live in a neighbourhood like that, but what can you do about it.’

Jack: ‘My next door neighbours have been robbed twice and then someone opposite my house…. just wondering what would happen if it happens to us’.

Eugenie: ‘On my estate there a dangerous area called […..], there are a lot of gangs shootings, killing, for me I would prefer if gang violence didn’t happen…. It is what it is… but little kids can’t go out and play…. I’m not going to go out randomly due to gangs in the area. Kids can’t come into school because of the threats, people are coming to the school to find them……. There was one time when they had to lock off the school because people from […..] were coming down wanted to get into the school, no one was allowed offsite, and people’s parents like families who were involved had to come quickly to get them out of school. Has an impact not only on the children involved but the whole school.’

Amy: 'Well it's strange because even though [seaside town] is 2 hours train away, it wasn't scary or frightening, cos you're surrounded by people but you're in a crowd of nice people, people I would trust more than this town. Cos if a crowd of people was with you from [home town], that crowd of people would tend to have some people who are a bit dangerous. But the thing that made me feel safer I think is seaside town is more family orientated. It's really nice over there. I wouldn't say I feel unsafe in town but in certain areas I don't really go there much.'

Some of the adolescents, particularly the girls, talked about the strategies they adopted to overcome potential problems.

Alisha: ' Yeah. Like when certain fights break out.. it can end up being.. quite… dangerous. I actually broke a fight up last week cos they were fighting over nothing and there's no reason to fight I told them to stop and they still didn't so I ended up taking action and pulling them apart. They were year 9 I think, they were fighting over nothing and then they got rude to me. And I was like why are you getting rude to me I just sorted that out for you.'

Josh: 'You see gangs round here…when they come near my street it just worries me and my dad has to like assure me that nothing…. nothing's gonna happen bad so I keep asking questions about it.'

Lingham: 'But sometimes teenagers about like 16 to 18 come round our area, they sit on people's walls. When I walk home from school my mum doesn't trust me with the keys. I sit on the wall and boys go round on their BMXs . My nana saw them coming and me sitting on the wall and she got me in. They just walk past, they don't say anything, if you say something to them then they might.. it's scary.'

Emily: ‘I’m very straight forward with what I do if I go out, I go to school or just go out with my friends but very I don’t know I very much restrict what I can do so if I am going here I am going back a certain time so my mum doesn’t have to worry. Well I don’t go out much around the neighbourhood ….. I go to my friends and cousins house. It’s very structured.’

Amy: ‘Well I went on the Geography trip the other day and had to walk to [….] and walk through and past the council houses and council flats over on the [….. Estate].... I don’t ever go there. I’m also cautious of the woods, that’s another place I don’t go. Quite a few of the people in the year above us and some people in our year had some bad experience this year with urrr mostly muggings, just walking around on the estate or walking through the woods, that’s where it happens, so it’s happened to one of my friends so it’s quite close to home, I try not to go near there.’

Josie: ‘I wouldn’t choose to live in this town, there’s a lot of crime, you hear about all the shootings, it’s horrible… It’s changed when I’ve been growing up really, cos when I was younger my mum would never let me out because there were people in the street, druggies, drunks and all sort but now they’ve cleaned out, like they’ve moved or now we have police come round our streets twice a day so it kind of moves them along and now I’m allowed out when I want’.’

Support from family was an important element in helping with their feelings of being unsafe. The families in this study provided support to protect the teenagers both emotionally as well as taking the children away from potentially risky situations. This mirrors research which has highlighted the importance of parental strategies to protect children in high risk neighbourhoods. Jarett (1995) in a qualitative study in the US of low income African American families reported parents protected their adolescents

from negative neighbourhood risk by closely supervising them. There are some parallels in this study which examined adolescents living in an area of high risk of crime compared to other UK towns, violent crime accounting for 16% of all crimes (British Crime survey, UK Crime Stats, 2004). The talk by the adolescents included ways they cope and protect themselves from a dangerous neighbourhood, often illustrating autonomy and self-agency.

4.5 Neighbourhood and community cohesion

The adolescents described what they perceived to be the positive elements of the local community in contrast to perceptions about the more negative characteristics in the preceding sections. Pride in the neighbourhood and the ability to access adult resources were important social components of where they lived.

> Alisha: 'We have a good community base and living in harmony and things like that. But there are certain people who make the community a bit like um.. yeh the gangs and things that were known on the news for. You don't see the good things at town in the news we are pretty much a big family but you don't ever hear about that.'

> Eugenie: 'It's quite friendly…. Well it used to be more friendly, a lot of people are still apprehensive to come out and things so you don't see people around as much, but it is quite a friendly neighbourhood. Exactly where I live, like my little Close, everyone's really close, like the other day someone two doors down from me, they had a BBQ and said everyone come in, they had a swimming pool out for the little kids so everyone get together, yeh it's quite homely over there, if anyone needs anything, it's okay to go to each other's houses.'

> Keshawn: 'um, just don't go round and if you see someone that looks a bit weird don't go near them … like if they're not acting normal or they just look

like drunk or something… cos they can do anything… get someone to help you, cos I know a lot of people around where I live..'

Josie: 'I've lived in a close since I was 2, its quite quiet, we have street parties, not really anymore cause our neighbours moved away, everyone's friendly. I think it's quite a relaxed area, you won't hear much traffic or anything, It's clean, I think it's clean, there are parks, Sainsbury's, pubs, pharmacists, doctors, dentists.'

Lingham: 'The place is really quiet and the neighbours are really nice. Whenever we go to Pakistan, my Dad trusts my neighbour, gives him the key, takes care. Once when we were gone out, this is a few weeks ago, our lawn at the front, was really high, he wanted to mow it without us letting us know, comes and starts cutting, and for them sometimes we do something.'

Amy: 'Because the […..] had a really bad reputation, now we all stick up for each other and we are all we all pull together, we prove everyone wrong. I think the community at the school is actually at the moment really, really good we all pull together, we prove everyone wrong. I think the community at the moment is really, really good.'

Louan: 'If your neighbours were like bad people, that could be an influence on you, but if you have good neighbours that can be an influence on you as well, you learn from them. Our neighbours are kind, sometimes they come to ours and we go to theirs. One she lives on her own, her husband died, we sometimes go there and help her.'

Eugenie: 'Next door neighbour is a carpenter, mum cooks for everyone, …. my neighbours supported me when I was locked out and they looked out for us when there was a theft in the garage.'

4.6 Parent and family support

The value of family support for teenagers' happiness was talked about by many of the adolescents. The importance of support and love of parents for life satisfaction was clear; the family was central to feelings of being taken care of and of feeling happy:

> Josh: 'Pretty satisfied with my life because of my family… cos my mum looks out for me, dad looks out for me, my sister looks out for me so… can't really ask for more.'
>
> Jack: 'When I see my family happy that makes me happy.'
>
> Emily: 'My family are really supportive and that makes your life more happy, do you have the support of your family of your friends of your family it does make a difference a lot,, cos you know you can go to them at any time and tell them what's going on and give you advice As the youngest child in my family I really look up to them….. I'm really glad to have a family that are very supportive of everything I do…. my siblings they pulled me aside and said 'Look we understand it might be a phase you are going through and all this but it's better for you to think about it and what you want to be in life. Do you like just want to carry on in that way or do you want a better path for yourself?'
>
> Eugenie: 'I just started to feel really uncomfortable with the person I was and sometimes when I was at home I was like a bit secluded, like when it was time for us all to come together as a family or something everyone would be laughing and I would be just the one who would sneak out or go upstairs or something. But my family have got me through it over the years and that's

really important and I think every child needs a supportive family, otherwise without my family I wouldn't be the person I am today.'

Family celebrations also mattered for adolescents.

> Alisha: 'I'm close to my nan and my granddad who lives here, cos I go to them every morning and after school, I see them, the 29th is the anniversary of my great granddads death, so on the 29th Dec we go round my nans house for a like second Christmas we just really celebrate his life and stuff it's quite an emotional time.'

> Keshawn: 'If it's my dad's birthday we do something he wants, like for my birthday we went to Forest Park and they have an obstacle course…for my dad's birthday we went on a skydiving course.'

Research has shown that young people who have warm and loving relationships with their parents have better socio emotional adjustment, including lower levels of behaviour problems (Bronstein, Duncan, D'Ari, Pieniadz, Fitzgerald, Abrams, Frankowski, Franco, Hunt and Oh Cha, 1996) and this was substantiated by this small sample of adolescents.

4.7 Friends' support

Friends were also mentioned as being relevant for well-being and happiness. The participants discuss a number of important roles friends provided including support, enabling the development of self-esteem, protection and gaining status through having friends

> Josh: 'Friends impact your satisfaction with life cos they stick up for you um… whenever… they're just .. when you're bored, they will come out so it's pretty good to be able to have them as friends.'

Jack: ‘It’s not just having friends to be with which makes you happy but like having friends as well.’

Lingham: ‘… and once I got into a fight with someone and he helped me out… and stopped the fight.’

Josie: ‘Yeh sleepovers they’re good. Cos everything comes out about everyone, everyone’s secrets, I like it cos its gossip. Things come out because it’s the night, and things come out at night and cos at school I don’t really see them they are on the other side of the year than me, so I’m on the other side.’

Eugenie: ‘They [peers] are a good influence… it’s more about supporting a friend being there for each other.’

Alisha: ‘Last year in year 9 sports day I was put down for 5 sports I didn’t want to do them and I was ill last year I felt I had to because I would be letting people down and I ended up being the only year 9 in the race …I started like coughing and things and I had to stop and then my friends actually picked me up and brought me across the finishing line. I was shy and self-conscious that year and overcome this with the support of friends’. Friends give me a sense of pride really cos they are always complementing me on things and I am complementing them on things.’

Amy: ‘I have two close friends at the moment and we’ve been friends for quite a while. So cos I’m quite quiet, it’s nice being with them because when we are together I’m not I’m not shy, we are just girls, we do the shopping, they are important to me because I think without them at school I think I would really be nervous, I would maybe feel a bit unsafe, unsupported and they really help me with the fact they are always there, they’re like family..’

Peer relationships are said to be important in adolescent development (Parker, 2006) and indirect neighbourhood effects may be transmitted through peers, particularly anti-social, activities (Leventhal & Brooks-Gunn, 2000). A study examining peer relationships discussed the importance of friend support as a protective effect suggesting the influence of peers is complex (Vaughan, Foshee & Ennett, 2011).

The support of family and friends was central to the children's' happiness and researchers generally accept the value of social support for children's well-being (McGrath, Brennan, Dolan & Barnett, 2009).

4.8. Reflexive Research practice

Throughout the research I tried to engage in reflective practice. I approached this in two ways:

1. Reflective work before the interviews to think about my personal social location and ways in which I would unconsciously shape the adolescents' voices
2. Attending in the interviews to my emotional responses to the teenagers to provide space for me to understand the double hermeneutics (Giddens, 1984).

A question which arose early in this research project was my concern and emphasis on objectivity. My career before starting the PhD. was in business where I found a logical, objective perspective, detached from subjectivity, brought success both in terms of personal status and job roles. This is also a personal style I find helpful, to put up a barrier between myself and others and it enables me to be 'in control'. In approaching the interviews, this orientation resulted in my perspective of the work which was categorised in a plan, including targets for actions which would be tracked. In the pilot study my supervisor provided valuable feedback about my need to control the interview conversation differently. Over a number of meetings, we discussed this

and I reflected that I needed to approach the interviews not as a 'project' but to be open to the experience of the adolescents' in the interviews. This resulted in my transferring power to the teenagers and paying attention to listening and 'hearing' what was said, and following their lead in the conversations.

The issue of being in control was further compounded by the view that I was an 'expert' in interviewing, though I recognised I would need some additional skills. My previous career for over 25 years was as a Human Resources consultant which involved in depth experience of employment interviews. At the beginning I did not comprehend the need for me to transform my personal perspective, to be more reflective in the approach and to think about the double hermeneutic (Smith and Osborn, 2003). This reflection lead me to develop more understanding of my dual role, I was similar (the interviewee and I are both human beings) but I was also separate from the adolescents interviewed. This led me to take the position of being alongside my participants as well as shaping the qualitative discussions. This reflection influenced my preparation for the interviews including providing space before the interviews to consider what my emotional position was, and the adolescent's perspective of being interviewed. This included the thought that my questioning could be intrusive when asking about family, friends and how satisfied the teenagers were with their lives. To support the teenager, I took a more casual style in contrast with my professional interviewing position and reflected on my personal history and cultural background. An example of this is in the interview with Alisha when I explored the change in self-agency in contrast to objective questioning I asked a very open question about her experience of change, which resulted in her 'talk':

Alisha : ' All started last year in year 9 sports day I was put down for 5 sports I didn't want to do them and I was ill last year and I wasn't meant to be doing any sport, I felt I had to because I would be letting people down and I ended up being the only year 9 in the whole year 10 race and it was 2 laps round the thing and I was first 3/4s of the

way round then I started to have my chest constricting and I knew it was my illness so I started like coughing and things and I had to stop and then my friends actually picked me up and brought me across the finishing line . I rather like built new friends, I had friends before not before but they weren't very nice so when I met this group of friends who were kind of there for me and now I'm friends with a lot of people in my year, that I wasn't originally friends with'.

I reflected on this interview and realised I needed to 'pull' less and be more open to the teenager's experience of their world. This links to Goffman (1981) and the idea of footing, the importance of speaking positions for the interviewer and interviewee. He makes a distinction between the interviewee who is talking and the composer, the interviewer. Reflecting on this made me aware I initially viewed the interviews in a positivist frame, participants as a potential data resource. This position is discussed in the miner metaphor (Kvale, 2008), knowledge is understood as buried and the interviewer is the miner who excavates the precious metal. This reflection caused me to move to a position of the discussion as an interaction between the teenagers and myself, and the move to feeling grateful to the students who allowed me into their worlds. There was a realisation, the children were very special and I needed to respect and be attentive in our discussions as we travelled on a journey.

I also learned to accept that the qualitative interviews, my interpretations and the analysis and write up were subjective and to be more comfortable with my connection to the research not as a liability but as an opportunity to make the research more meaningful. The relationship between the teenagers in the interviews and through the transcription and analysis made the study unique, including in the ways students and I shaped each other in the discussions.

4.9 Conclusions

The primary objective of this qualitative study was to explore how adolescents perceive their neighbourhoods and to enquire into this group's perceptions of happiness (Research question 1). The findings were from a small, teacher selected sample of British adolescents living in a multi-cultural urban neighbourhood. Responses to the qualitative interviews were based on what they wanted to disclose and what was particularly relevant on the day. These findings need to be considered within this context and further qualitative research examining the influence of neighbourhoods, family and friends would be beneficial to further extend understanding about the crucial factors influencing adolescent's health and well-being.

A further consideration is the dominant perspective in research studies of adolescence which is lacking enquiry into perceptions from a child's perspective. However a valuable body of work using a qualitative methodology which addresses this problem is developing. The researcher in this study did not frame the participants in the traditional sense of examining differences by gender and ethnic background, though a convenience sample of children from Asian and White British backgrounds was used. Instead of differences emerging based on these externally defined demographic characteristics, analysis of the teenagers' talk suggested a varied and rich discourse, with the adolescents often reinforcing each other, for instance as they talked about the importance of friends' support for happiness (section 4.7). The analysis and coding of the data did not shed light on differences from respondents' backgrounds, in fact the reverse; the commonality of themes in the adolescents' comments makes a powerful story which is useful for future research.

The adolescents discussed well-being and the neighbourhood in a variety of different ways with nuanced perceptions containing personal accounts of their experience .The study results informed the design of the quantitative study and overall the study confirmed the choice of measures used in the follow-on study, particularly the studying of a number of specific contexts important for adolescents' happiness. The

adolescents discussed a variety of important factors including social support from their community, family and friends. The adolescents talk highlighted the contribution of parents to children faring better, affirming the inclusion of parents' perceptions of support and involvement in the adolescent quantitative study. A follow-on study was also designed to collect parents' views about important factors for their children's happiness and to enable exploration and comparison of children and their parents' interpretations of the neighbourhood.

The adolescents suggested physical activity was important for better health and well-being with examples such as playing sport and boxing. This supports the strong evidence for the positive influences of physical activity on musculoskeletal health, cardiovascular health and weight for youth (Strong, Malina, Blimkie, Daniels, Dishman, Gutin, Hergenroeder, Must, Nixon, Pivarnik, Rowland, Trost & Trudeau, 2005). Research also suggests being active is crucial to improve the mental health for young people (Ekeland, Heian, & Hagen, 2005; Parfitt & Easton, 2005). This master theme influenced the quantitative element of this study to include enquiry into adolescent's perceptions about their exercise and how important it was for them to be in a good shape.

The influence on adolescents' emotions and affect from living in a dangerous neighbourhood was apparent as already discussed. Children's worries about safety and the influence of unsafe neighbourhoods characterised by crime and gangs on adolescent's health and well-being is well-documented (Leventhal & Brooks-Gunn, 2000, Elliott, Wilson, Huizinga, Sampson, Elliott & Rankin, 1996. The qualitative study endorsed the inclusion of measures in the follow-on study to examine the varying contexts which influence teenagers' mental health and other emotional states.

The incorporation of children's voices into research about the environment and how children fare well is essential to help understanding and to progress the research

perspective and conceptualisation of place that comes from young people (Nicotera, 2007). This study contributes to knowledge from an 'insider view of teenagers living in a multicultural town about what was important for their well-being and happiness. The 'outsider' view of the town was derived from national news articles depicting the area in a negative way, with the community overrun by crime, many local gangs with regular shootings and killings, making little reference to the role of adolescents in the neighbourhood. The adolescents raised the problems of crime and violence without prompting; for example Josh and Emily talked about strategies they adopted to overcome potential problems of crime and violence by taking precautions in locking the house and restricting the way they moved around the area (section 4.4).

Adults living within a neighbourhood with higher crime and gangs will often frame adolescents as being part of the problem. It is less frequent for adults and researchers to include teenagers' perspectives. The present study uncovered valuable insights, for example in the discussions about community cohesion. The children mentioned the positive characteristics of the community which contrasted with the national news about gangs; Keshawn talked about getting support from local people if someone acted abnormally and he felt at risk; Alisha recounted how she wanted to be part of making positive changes through civic engagement (section 4.5). This provides nuanced perceptions of a neighbourhood and their role in being part of the community from teenagers' perspectives.

The 'external' view is often one of children being passive to the more negative elements of the community. The children displayed self-agency in a number of ways; for example Alisha (section 4.4) related a scenario when a fight broke out and she intervened to sort out the situation; and Louan described helping others in the neighbourhood which made 'a good life for him' (section 4.2).

Neighbourhood research suggests that trusting in others in your community may be a buffer against emotional disorders (Meltzer, 2007). There was support for this in this study when Alisha discussed the importance of a good community base and living in 'harmony' and 'like a big family'. This reflects a study by Trinidad (2003) which found that harmony was critical to adolescents' positive mental well-being.

Researchers generally accept the value of social support for children's well-being (McGrath et al., 2009) and it is well established that positive support and encouragement from family and friends is likely to be central to children's' happiness. These more traditional aspects of friends and family being important for adolescents faring well were also emphasised in the study, but the conversations also detailed more original information about the neighbourhood. Young people's perceptions of their local area included a neighbourhood characterised with gangs and crime and yet they talked about the contribution of a more socially connected environment and the ways they take control of their lives which was relevant to their well-being, their socio-emotional and behavioural development. A further point highlighted in these interviews was that the 'happiness' picture is complicated by a sense of variation in how the teenagers feel from one day to another or even within one day. Emotions often change quickly and feelings may be different in different contexts – at home, at school, out in the neighbourhood.

The adolescent's commented about social interactions and accessing resources which suggested they are not passive recipients but active members within a neighbourhood creating capital for themselves and the community. This is illustrated by talk of taking control of their lives; improving aspects of the neighbourhood and self-agency through discussion of strategies to protect themselves from dangers in their neighbourhood. This would suggest the need to study youth more broadly, considering the aspects of the neighbourhood especially relevant to young people which will include both positive and negative aspects (Nicotera. 2008). This approach

contributes to richer research to better understand the influences on youth's health and well-being within a neighbourhood context and supports the strategy of using multimodal methods of enquiry.

CHAPTER 5

QUANTITATIVE STUDY 2 RESULTS

5.1 Response Rates for study 2 and 3

For Study 2 in Location 1, from the youth sample of 209, 129 parents and their child agreed for their child to take part in the survey which represents a 62.2% response rate. The response rate for location 2 was similar, from a total potential recruitment group of 122, 79 parents and their child agreed for the child to take part in the survey, representing a 64.8% response rate. The overall response rate was 63%, from a total sample of 331, and 208 parents and their children agreed for the adolescent to take part in the study.

Examination of rates by year group and gender (see Table 5.1) highlighted similarity between the location and a trend for more responses from the younger (year 9) boys but the older (year 10) girls in both locations.

Table 5.1. Response rate by adolescent individual characteristics

	Location 1 (%)	Location 2 (%)
Year 10 Male	55.2	62.1
Year 10 Female	66.1	72.5
Year 9 Male	73.5	79.4
Year 9 Female	63.9	69.6

For Study 3 the response rate for parents was lower than study 2; 129 parents were invited to take part in the study and 65 returned the postal survey which represents a 50.4% response rate. The study is useful therefore as an initial exploration of parents' and children's perspectives about the neighbourhood but a more representative sample of parents is needed in order to make more definitive conclusions. The parents who took part in study 3 reported very high levels of involvement which may result in systematic bias which is an important additional limitation to this study and the results need to be treated with caution. However the discussion of the methodological challenges in recruiting parents highlights the difficulties in achieving

multiple family perspectives to better understand the influences on children's health and well-being.

Gove (1976) concluded response bias generally does not act as a form of systematic bias that invalidates the pattern of relationships observed with independent variables. In addition many studies (Groves, 2006) have demonstrated that achieving a higher response rate for a survey does not result in significantly different estimates than the same survey using a less aggressive protocol and achieves a lower response rate (Davern et al., 2010). A further consideration is that any response bias varies over different estimates in a survey for example the bias may be different in response to sense of belonging to a neighbourhood compared to civic engagement. The relevant question is what causes a survey variable to correlate with the likelihood of a response? It could be argued that in this research, parents of girls were more likely to give permission for their child to take part in the study as the focus on health and well-being was more relevant than for parents of boys and hence cause systematic bias. However as parents and their children both needed to give permission before taking part there are other factors impacting on this, including the attitudes of boys versus girls to taking part in survey research. The issue of response rates is discussed in the limitations section

5.2 Validation of survey items

Measure scale reliabilities were compared to empirical research using the same measures (see Table 5.2). The researcher compared the reliability of scales, noting that those for parent involvement (0.59) and neighbourhood antisocial behaviour (0.57) were low, deciding to progress to further analysis but with caution when these scales were included.

Table 5.2. Measure Cronbach Alphas for study 2 and Repeated measures Cronbach alphas

	Cronbach's Alpha sample	**Cronbach's Alpha comparison repeated surveys**
Neighbourhood sense of belonging	0.69	0.85 (Barnes, 1997 n = 142) 0.75 (Gorman- Smith, Tolan & Henry, 2000, n =288)
Neighbourhood Collective efficacy(social cohesion)	0.70	0.88 (Odgers, 2009, n =2,232)
Neighbourhood Volunteering	0.61	0.75 (Mellor, 2009, n = 1,219)
Parental Support	0.78	0.75 (Brookmeyer, 2005, n = 1,599)
Parental Involvement	0.59	0.72 (Dick, 2007, n = 3,284)
Peer support	0.85	0.57 (Dubow, 1997, n = 315)
Peer positive health modelling	0.77	0.63 (Jessor, Turbin, & Costa, 1998, n = 2263)
Neighbourhood antisocial behaviour & crime	0.57	Questions designed for the study, no repeated survey comparison
Adverse health risk behaviours	0.67	Alcohol 0.68 (WHO, 2004, n = 2263) Smoking 0.84 (WHO, 2004, n = 2263)
Enhancing health behaviours	0.82	0.75 (WHO, 2004, n = 2263)

5.3 Children's Individual Characteristics.

Children were asked several questions about their individual characteristics.

5.3.1 Children's age by year group

The participants were selected from two year groups in two locations. Age was recorded categorically into two groups (see Table 5.3). Across both locations 51.2% of the children were in the younger group (year 9, age 13.5 -14.5) and 48.8% in the older group (year ten, age 14.6 - 15.6). Comparing the two locations, there was no significant difference between the locations in the proportions of children in the older and younger year groups ($\chi^2(1)=1.69$, p=.19; see Table 5.3).

5.3.2 Child gender

Information about the gender of participants was collected, with males accounting for 51.7% and females 48.3% of the sample with no difference between locations ($\chi^2(1) = .003$, $p = .96$; see Table 5.4).

Table 5.3. Children by year group by site (percentages in brackets)

	Year 9	Year 10	Total
Location 1	62 (47.7)	68 (52.3)	130 (62.2)
Location 2	45 (57.0)	34 (43.0)	79 (37.8)
Total	107 (51.2)	102 (48.8)	209

Table 5.4. Child Gender by site (percentages in brackets)

	Male	Female	Total
Location 1	67 (51.5)	63 (48.5)	130
Location 2	41 (51.9)	38 (48.1)	79
Total	108(51.7)	101(48.3)	209

5.3.3 Child Ethnic Group

Based on self-report, just over two thirds of children were white (67.5%) with mixed race accounting for 12.9% of the sample and similar proportions of Asian (9.6%) and Black (10.0%) students. There was a significant difference between locations ($\chi^2(3) = 30.05$, $p<.000$) with a greater proportion of Asian, black and mixed background children in location 1 and more children of white ethnic background in location 2 (see Table 5.5).

Table 5.5. Child ethnic group by site (percentages in brackets)

	Location 1	Location 2	Total
Asian	18 (13.8)	2 (2.5)	20 (9.6)
Black	20 (15.4)	1 (1.3)	21 (10.0)
Mixed	22 (16.9)	5 (6.3)	27 (12.9)

White	70 (53.8)	71 (89.9)	141 (67.5)
Total	130	79	209

Further analysis was completed due to the small numbers in the Asian, Black and Mixed categories to two groups; White and non-white. Just over two thirds of children were white (67.5%) with other ethnic groups accounting for 32.5%. There was a significant difference between locations ($\chi^2(2)29.06$, $p<.000$) with a greater proportion of other than white background children in location 1 and more children of white ethnic background in location 2 (see Table 5.6).

Table 5.6. Child ethnic group by site (percentages in brackets)

	Location 1	Location 2	Total
White	70 (53.8)	71 (89.9)	141 (67.5)
Other than White	60 (46.2)	8 (10.1)	68 (32.5)
Total	130 (62.2)	79 (37.8)	209

5.4 Microsystem - Family Background Characteristics

Children were asked about whom they lived with and how long they had been in their current neighbourhood.

5.4.1 Family Type

Ninety six per cent of children reported on their family type. Two thirds (66.0%) lived with both parents and nearly a fifth (19.5%) with their mother with no significant difference between locations ($\chi^2(3) =.121$, $p = .989$; see Table 5.7).

Table 5.7. Family Type by site (percentages in brackets)

Lives with:	Location 1	Location 2	Total
Both parents	82 (65.6)	50 (66.7)	132 (66.0)
Mother	25 (20.0)	14 (18.7)	39 (19.5)
Step family	14 (11.2	9 (12.0)	23 (11.5)
Other family type	4 (3.2)	2 (2.7)	6 (3.0)
Total	125	75	200

5.4.2. Residential Stability

The majority of children's residential stability was established with 94% giving information. Just over two thirds (69.0%) reported living in the neighbourhood for six years or more and only 16.3% for two years or less. There were more long-term residents in location 1 and more who had been in the area less than a year in location 2 ($\chi^2(4) = 9.92$, $p < .05$; see Table 5.8).

Table 5.8. Residential Stability by site (percentages in brackets)

Lived in neighbourhood for:	Location 1	Location 2	Total
under 1 year	4 (3.1)	10 (13.2)	14 (6.9)
1-2 years	13 (10.2)	6 (7.9)	19 (9.4)
3-5 years	21 (16.5)	9 (11.8)	30 (14.8)
6-10 years	30 (23.6)	23 (30.3)	53 (26.1)
11 or more years	59 (46.5)	28 (36.8)	87 (42.9)
Total	127	76	203

5.5. Microsystem - Family Management

Children were asked several questions about the extent to which their parents were involved in their activities.

5.5.1. Parental Support

The majority of children reported more rather than less parental support (items scored 1 to 4 with 4 representing 'almost always' (see Table 5.6). A majority of the children reported that their parents were almost always or always interested in what they were doing (89.9%) and what they thought and felt (88.9%); over three quarters of children (75.7%) thought their parents looked out for activities or that they could always or almost always talk to their parents about problems (78.7%). There were no differences between the sites in mean parent support item scores (range 1 to 4; see Table 5.9., Table 5.10).

Table 5.9. Extent to which children report parental support (1 almost never to 4 almost always; percentages in brackets) and mean scores (standard deviations in brackets)

	1	2	3	4	Mean (SD)
Do parents encourage what you are interested in doing? (N=209)	2 (1.0)	19 (9.1)	86 (41.1)	102 (48.8)	3.4 (0.7)
Are parents interested in what you think and how you feel? (N=207)	5 (2.4)	18 (8.7)	84 (40.6)	100 (48.3)	3.4 (0.7)
Do parents keep an eye out for activities that you would enjoy? (N=206)	14 (6.8)	36 (17.5)	86 (41.7)	70 (34.0)	3.0 (0.9)
When you have problems, can you talk them over with your parents? (N=207)	8 (3.9)	36 (17.4)	81 (39.1)	82 (39.6)	3.1 (0.8)

Table 5.10. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of their neighbourhood and of parental support.

	Location 1 Mean (SD)	Location2 Mean (SD)	t-test and significance
Do parents encourage what you are interested in doing? (N=209)	3.37 (.67)	3.41 (.74)	t(207) =.36; p=.72
Are parents interested in what you think and how you feel? (N=207)	3.28 (.74)	3.46 (.73)	t(205) =.1.65; p=.10
Do parents keep an eye out for activities that you would enjoy? (N=206)	2.98 (.90)	3.11 (.86)	t(204) =1.08; p=.28
When you have problems, can you talk them over with your parents? (N=207)	3.12 (.81)	3.19 (.89)	t(205) =.60; p=.55

5.5.2. Parental Involvement.

The children varied in how much they thought their parents knew about their activities and their friends or set rules about them. Almost all (91.9%) responded that their parents knew where they were in their free time and after school. The majority (78.9%) were also clear about when they were expected home from school. A similar percentage (77.0%) said that their parents talked about what they had done during the day but fewer (46.4%) reported that their parents talked to them about who they had been and only just over a third (34.4%) indicated that their parents limited who they could go about with (see Table 5.11).

There were significant differences between children in the two locations for all but one of these aspects of parental involvement (see Table 5.11). Children in the more advantaged location (2) reported that their parents were more clear about what time they were expected home, more likely to talk to them about what they had done or who they had been with and more likely to know what they did on most afternoons after school. In contrast children in the more disadvantaged location were more likely

to say that there were young people their parents would not allow them to be with (see Table 5.11 and Table 5.12).

Table 5.11. Number of children responded positively to questions about parental involvement and mean score (yes=2, no=1) (percentages and standard deviations in brackets)

	N Yes (%)	Mean (SD)	Mean site 1 (SD)	Mean site 2 (SD)
Are you clear about the time you are expected to be home from school? (N=208)	165 (79.3)	1.79 (.41)	1.72 (.45)	1.91* (.29)
Are there young people your parent(s) won't allow you to be with? (N=209)	72 (34.4)	1.34 (.48)	1.40 (.49)	1.25 * (.44)
In the last 24 hours have your parents(s) talked to you about what you had done during the day? (N=209)	161 (77.0)	1.77 (.42)	1.72 (.45)	1.85* (.36)
In the last 24 hours have your parent(s) talked to you about who you have been with? (N=209)	97 (46.4)	1.46 (.50)	1.40 (.49)	1.57* (.50)
Your parent(s) know about what you do with your free time? (N=208)	192 (92.3)	1.92 (.27)	1.91 (.28)	1.94 (.25)
Your parent(s) know about where you are most afternoons after school? (N=208)	192 (92.3)	1.92 (.27)	1.89 (.31)	1.97* (.16)

***** t-test significant at p<.05.

Table 5.12. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of parental involvement in their activities

	Location 1	Location 2	t-test and significance
Are you clear about the time you are expected to be home from school? (N=208)	1.72 (.45)	1.91* (.29)	t(205.7)=3.73 , p=.001
Are there young people your parent(s) won't allow you to be with? (N=209)	1.40 (.49)	1.25 * (.44)	t(179.7)=2.24 , p=.03
In the last 24 hours have your parents(s) talked to you about what	1.72 (.45)	1.85* (.36)	t(191.3)=2.21 ,

you had done during the day? N=209)			p=.03
In the last 24 hours have your parent(s) talked to you about who you have been with? (N=209)	1.40 (.49)	1.57* (.50)	t(207)=2.41, p=.02
Your parent(s) know about what you do with your free time? (N=208)	1.91 (.28)	1.94 (.25)	t(207)=0.58, p=.06
Your parent(s) know about where you are most afternoons after school? (N=208)	1.89 (.31)	1.97* (.16)	t(200.1)=2.54 , p=.01

5.6. Microsystem - Peers.

5.6.1. Peer Control and Support.

The majority of the children (73.3%) reported that their friends would probably or definitely try to stop them if their behaviour was bad for their health and a similar proportion (72.7%) said that friends would probably or definitely try to stop them from doing something wrong (see Table 5.13). Most children (85.4%) also thought peers were probably or definitely interested in how they feel (see Table 5.13). There was no difference between the locations in the mean scores on peer support (see Table 5.10, Table 5.14).

Table 5.13.The extent to which children expected that friends would be involved in their behaviour and feelings (1 definitely would not to 4 definitely would; percentages in brackets) and mean item scores (standard deviations in brackets)

	1	2	3	4	Mean (SD)
If you were trying to do something that was bad for your health, would your friends try to get you to stop (N=206)	16 (7.8)	39 (18.9)	99 (48.1)	52 (25.2)	2.91 (0.87)
If you were trying to do something that was wrong would your friends try to stop you (N=205)	15 (7.3)	41 (20.0)	89 (43.4)	60 (29.3)	2.95 (0.89)

Are your friends interested in how you feel (N=205)	6 (2.9)	24 (11.7)	108 (52.7)	67 (32.7)	3.15 (0.74)

Table 5.14. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of their peers control and support

	Location 1 Mean (SD)	Location 2 Mean (SD)	t-test significance
If you were trying to do something that was bad for your health, would your friends try to get you to stop (N=206)	2.92 (.88)	2.88 (.84)	t(204)=0.32, p=.75
If you were trying to do something that was wrong would your friends try to stop you (N=205)	2.98 (.91)	2.90 (.85)	t(203)=0.63, p=.53
Are your friends interested in how you feel (N=205)	3.16 (.76)	3.14 (.71)	t(203)=0.92, p=.92

5.6.2. Peer Health Modelling

Fewer than half of the children reported that their friends were good at positive health modelling (see Table 5.15). Only 48.8% indicated that most or all of their friends ate healthily, a similar percentage (48.0%) that most or all friends took enough exercise, and 42.4% that most or all friends got enough sleep at night (see Table 5.15). With a range from 1 to 4, mean scores did not differ between locations, although there was a trend for children in location 2 to say that friends paid more attention to a healthy diet than friends of children in location 1 (means 2.31 and 2.52, t= 1.80, p=.07; see Table 5.16 for full details).

Table 5.15. The extent to which children thought that their friends acted in a healthy manner (percentages in brackets) and mean peer health behaviour (range from 1 to 4, standard deviations in brackets)

	None	Some	Most	All of them	Mean (SD)
How many of your friends pay attention to eating a healthy diet (N=203)	29 (14.3)	79 (38.9)	82 (40.4)	13 (6.4)	2.39 (.81)

How many of your friends make sure they get enough exercise (N=206)	22 (10.7)	81 (39.3)	78 (37.9)	25 (12.1)	2.51 (.84)
How many of your friends try to get enough sleep at night (N=205)	35 (17.1)	83 (40.5)	70 (34.1)	17 (8.3)	2.34 (.86)

Table 5.16. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of peers health modelling

	Location 1 Mean (SD)	Location 2 Mean (SD)	t-test significance
How many of your friends pay attention to eating a healthy diet (N=203)	2.31 (.81)	2.52 (.81)	t(201)=1.80, p=.07
How many of your friends make sure they get enough exercise (N=206)	2.50 (.87)	2.55 (.80)	t(204)=0.41, p=.69
How many of your friends try to get enough sleep at night (N=205)	2.28 (.87)	2.43 (.83)	t(203)=1.19, p=.23

5.7. The Exosystem – Neighbourhood Context.

Children answered questions about four aspects of their neighbourhood context. In addition children's neighbourhood deprivation ranking data from the Office for National Statistics (ONS, 2014) was recorded based on their home postcodes.

5.7.1. Neighbourhood sense of belonging.

Many of children reported a strong sense of belonging to the neighbourhood. Almost two thirds (64.6%) thought their neighbourhood was a friendly place and just over half (58.2%) reported that they felt as if they belonged to the neighbourhood with slightly fewer (47.0%) feeling loyal to the neighbourhood and only just under one third (31.1%) thought of themselves as similar to people in the neighbourhood (see Table 5.17).

Table 5.17. The number of children agreeing to statements about friendliness in their neighbourhood; personal belonging to the neighbourhood (1 disagree strongly to 5 agree strongly) and mean neighbourhood belonging scores (percentages and standard deviations in brackets)

	1	2	3	4	5	Mean (SD)
Where I live is a friendly place (N=209)	5 (2.4)	24 (11.5)	45 (21.5)	102 (48.8)	33 (15.8)	3.64 (.96)
I think of myself as similar to the people who live in the neighbourhood(N=206)	16 (7.8)	58 (28.1)	68 (33.0)	56 (27.2)	8 (3.9)	2.91 (1.01)
I feel like I belong to the neighbourhood (N=208)	8 (3.8)	22 (10.6)	57 (27.4)	104 (50.0)	17 (8.2)	3.48 (.93)
I feel loyal to the neighbourhood N=206)	13 (6.3)	23 (11.2)	73 (35.5)	86 (41.7)	11 (5.3)	3.29 (.96)

There were significant location differences in two of these aspects of children's perceptions of their neighbourhood. Children in Location 2 were more likely to endorse that their neighbourhood was a friendly place (means 3.40 and 4.04, $t(204)= 4.91$, $p<.0001$) and that they felt similar to other people in the neighbourhood (means, 2.80 and 3.09, $t(196.3) = 1.98$, $p<.05$; see Table 5.18 for full details).

Table 5.18. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of neighbourhood sense of belonging

	Location 1 Mean (SD)	Location 2 Mean (SD)	t-test and significance
Where I live is a friendly place (N=209)	3.40 (.99)	4.04 (.76)	t(196.3)=4.90, p=.0001
I think of myself as similar to the people who live in the neighbourhood (N=206)	2.80 (1.00)	3.09 (1.01)	t(204)=1.98, p=<.05
I feel like I belong to the neighbourhood (N=208)	3.43 (.94)	3.56 (.91)	t(206)=1.00, p=.32
I feel loyal to the neighbourhood N=206)	3.28 (1.00)	3.30 .89)	t(204)=2.41, p=.89

5.7.2. Neighbourhood felt support.

More than half of the children (55.1%) agreed there were many local people they could go to for help (see Table 5.19). In contrast more than half the children (58.2%) reported that they did not visit in their neighbours' homes and only half (50.3%) would borrow food from a neighbour (see Table 5.19) There were no significant differences between locations for these aspects of the neighbourhood, but a trend (p= .09) for children in location 2 to be on average more comfortable than children in location 1 if they had to borrow food from a neighbour (means 2.51 and 2.82, t = 1.711; see Table 5.20 for full details).

Table 5.19.The extent to which children agree with statements about knowledge of and friendship with neighbours (from 1 strongly disagree to 5 strongly agree; percentages and standard deviations in brackets)

	1	2	3	4	5	Mean (SD)
There are lots of people in my area I could go to if I needed help (N=207)	14 (6.8)	40 (19.3)	39 (18.8)	88 (42.5)	26 (12.6)	3.35 (1.13)
I visit my neighbours in their homes (N=208)	49 (23.6)	72 (34.6)	27 (13.0)	45 (21.6)	15 (7.2)	2.54 (1.26)
I would feel comfortable asking to borrow food from a neighbour where I live (N=205)	49 (23.9)	54 (26.4)	39 (19.0)	50 (24.4)	13 (6.3)	2.63 (1.26)

Table 5.20. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of neighbourhood felt support

	Location 1 Mean (SD)	Location 2 Mean (SD)	t-test and significance
There are lots of people in my area I could go to if I needed help (N=207)	3.32 (1.17)	3.40 (1.06)	t(205)=0.49,p=.62
I visit my neighbours in their homes (N=208)	2.55 (1.22)	2.53 (1.34)	t(206)=0.10, p=.92
I would feel comfortable asking to borrow food from a neighbour where I live (N=205)	2.51 (1.21)	2.82 (1.33)	t(203)=1.71, p=.09

5.7.3. Neighbourhood collective efficacy.

Almost two thirds of children (59.9%) reported good neighbourhood social connectedness in that they agreed that people locally are friends with other local people (see Table 5.21) and just over two thirds (69.2%) reported that they knew their neighbours quite well. Over half (56.0%) considered that local people would be willing to help their neighbours but fewer than half (45.5%) strongly agreed or agreed that people in the neighbourhood could be trusted (see Table 5.21) With scores that could range from 1 to 5, mean scores for the following aspects of neighbourhood efficacy were significantly higher in location 2 than location 1 (means: trusted, 3.12, 3.51, $t(207)= 2.55$, $p<.01$; friends 3.45, 3.86, $t(180.6) = 3.63$, $p<.001$; help, 3.33, 3.80, $t (198.9)= 3.77$, $p<.001$; there was no significant difference between locations for children knowing their neighbours, 3.66, 3.65, $t(203) = 0.05$, $p = >.05$; see Table 5.22 for full details).

Table 5.21. Extent to which children agree about the trustworthiness and friendliness of local residents (1 strongly disagree to 5 strongly agree; percentages in brackets) and mean item scores (standard deviations in brackets)

	1	2	3	4	5	Mean (SD)
People in this neighbourhood can be trusted	19 (9.1)	21 (10.0)	74 (35.4)	75 (35.9)	20 (9.6)	3.27 (1.07)
People where I live are friends with local people	2 (1.0)	17 (8.2)	64 (30.9)	100 (48.3)	24 (11.6)	3.61 (0.83)
People around here are willing to help their neighbours	8 (3.8)	20 (9.6)	64 (30.6)	92 (44.0)	25 (12.0)	3.51 (0.96)
I know my neighbours quite well (n=205)	10 (4.9)	33 (16.1)	20 (9.8)	96 (46.8)	46 (22.4)	3.64 (1.14)

Table 5.22. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of neighbourhood collective efficacy

	Location 1 Mean (SD)	Location 2 Mean (SD)	t-test and significance

People in this neighbourhood can be trusted	3.12 (1.07)	3.51 (1.02)	t(207)=2.55, p=.01
People where I live are friends with local people	3.45 (.85)	3.86 (.75)	t(180.6)=3.63, p=.0001
I know my neighbours quite well	3.66 (1.16)	3.65 (1.10)	t(203)=0.05, p=.96
People around here are willing to help their neighbours	3.33 (1.02)	3.80 (.76)	t(198.9)=3.77, p=.0001

5.7.4. Neighbourhood Volunteering.

Only a minority of the children reported any volunteering activity in their neighbourhood, with just over one third (36.5%) helping local people (36.5%), a similar proportion helping to raise money for local charities (38.2%), and fewer helping to improve the neighbourhood (18.8%) or involved with faith organisations (16.9%) (see Table 5.23). Children in the two locations differed significantly on one of these behaviours. Those living in location 1 were more likely to help with a faith organisation ($t(201)= 4.17$, $p<.0001$, see Table 5.23). There was a non-significant trend for children in site 2 to provide more help to local people ($t\ df156.5 = 1.80$, $p=.07$).

Table 5.23. Numbers of children who reported engaging in different types of local volunteering (percentages in brackets) and mean item scores by site (yes = 2, no = 1; standard deviations in brackets)

	Yes	Total Mean (SD)	Mean site 1	Mean site 2
Helping local people (N=208)	76 (36.5)	1.37 (.48)	1.32 (.48)	1.44 (.50)
Helping to improve the neighbourhood (N=208)	39 (18.8)	1.19 (.39)	1.16 (.36)	1.24 (.43)
Helping to raise money for charity (N=207)	79 (38.2)	1.38 (.49)	1.40 (.49)	1.35 (.48)
Helping with faith organisations (e.g. church, mosque (N=207)	35 (16.9)	1.17 (.38)	1.24 (.43)	1.05 (.22)

5.7.5. Indices of Deprivation.

As expected, since this was the basis for their selection, deprivation was significantly different in the two study locations ($\chi^2(3)= 118.04$, $p<.0001$). Just under one quarter of the children (22%, all in location 1) lived in output areas that fell in the bottom 20 percentiles representing the most deprived neighbourhoods in England, and no children lived in this bottom percentile for location 2. Across both locations 19.1% lived in the 21st to 60th percentile neighbourhoods (but only 1 for location 2) and the remaining 58.9% (the majority in location 2) lived in areas with a deprivation index in the 61st or above percentile, reflecting less deprivation (see Table 5.24).

Table 5.24. The distribution of children living in different levels of deprivation by site (percentages in brackets)

IMD rank	Location 1 N=130	Location 2 N=79	Total N=209
Below 6497, Bottom 20 percentiles	46 (35.4)	0	46 (22.0)
6497-19489, 21st to 60th percentiles	39 (30.0)	1 (1.3)	40 (19.1)
19490- 25985, 61st to 80th percentiles	37 (28.5)	21 (26.6)	58 (27.8)
25986 – 32482, 81st to 100th percentiles	8 (6.2)	57 (72.1)	65 (31.1)

Analysis exploring the total distribution of participants found a range in IMD ranks from 623 (within the lowest decile) to 32120 (in the highest decile; see Table 5.25)

Table 5.25. Distribution of IMD scores of participants based on the Census Output Area in which they lived.

	Frequency	Percent
623	12	5.7
3049	10	4.8
3368	8	3.8
4058	1	.5
4280	4	1.9

4613	2	1.0
4898	1	.5
5198	7	3.3
5599	2	1.0
7472	1	.5
7625	1	.5
7664	2	1.0
7899	3	1.4
8072	1	.5
8239	4	1.9
9524	1	.5
10081	4	1.9
10531	1	.5
10837	1	.5
11448	4	1.9
12124	1	.5
12166	1	.5
12250	1	.5
12947	1	.5
14939	5	2.4
16379	1	.5
16756	1	.5
17644	4	1.9
18891	1	.5
19656	12	5.7
20318	1	.5
21683	6	2.9
21831	7	3.3
22630	3	1.4
23209	1	.5
23476	6	2.9
23570	1	.5
23827	2	1.0
24224	2	1.0
24242	1	.5
24371	1	.5
24484	4	1.9
24489	1	.5

24872	6	2.9
25010	1	.5
25119	1	.5
25427	2	1.0
26069	12	5.7
26351	9	4.3
26378	9	4.3
26595	2	1.0
26657	1	.5
27575	1	.5
28508	1	.5
28645	3	1.4
29215	1	.5
29344	7	3.3
29756	7	3.3
30672	2	1.0
31306	2	1.0
31370	3	1.4
31666	1	.5
31971	2	1.0
32101	1	.5
32120	1	.5
Total	209	100.0

5.8. Children's Health and Well-being outcomes.

5.8.1. Psychological adjustment

The mental health scale (Strengths and Difficulties Questionnaire, SDQ) can be represented as a continuous variable and as three groupings: normal, borderline and abnormal. The abnormal grouping indicates 'likely' cases of children with mental health disorders (Goodman, 1997). In this study just over three quarters had scores in the normal range (76.6%) with 12.9% borderline and 10.5% in the abnormal range (see Table 5.26) which mirrors the norm statistics provided by Goodman (1997; see Table 5.27), with no difference between sites (χ^2 1.595, df 2, p = .450). The total

SDQ (25 items) alpha statistic was .72. This statistic was compared to other studies utilising the SDQ. A study by Essau (2013), reported in a Confirmatory Factor Analytic Study on children and adolescents in Iran, an alpha statistic for the SDQ instrument of 0.62. A further Swedish study by Svedin, (2008) reported an alpha statistic of 0.74. This suggests the SDQ questionnaire is a robust instrument with generalisability for the adolescent population.

Comparisons of mean total problems and mean subscale scores by location revealed only one significant difference, the children in location 1 had a significantly higher conduct problems subscale score ($t(207) = 2.08$, $p<.05$; see Table 5.28).

Table 5.26. Distribution of children in the three Psychological Adjustment groups based on the Total Difficulties score of the Strengths and Difficulties Questionnaire by site (percentages in brackets)

	Normal	Borderline	Abnormal
Total	160(76.6)	27(12.9)	22(10.5)
Location 1	96 (73.8)	18 (13.8)	16 (12.3)
Location 2	64 (81.0)	9 (11.4)	6 (7.6)

Table 5.27. SDQ normative sample and study sample total difficulties and sub scales means (standard deviations in brackets)

	SDQ normative sample	Study Sample
Total Difficulties	10.3 (5.2)	11.8 (5.7)
Emotional symptoms	2.8 (2.1)	2.8 (2.2)
Conduct problems	2.2 (1.7)	2.4 (1.9)
Hyperactivity/Inattention	3.8 (2.2)	4.7 (2.3)
Peer problems	1.5 (1.4	1.9 (1.6)
Prosocial behaviour	8.0 (1.7)	6.6(1.9)

Table 5.28. Comparisons of mean scores (standard deviations in brackets) by location for children's SDQ and subscales

	Location 1	Location 2	t-test and significance
Total difficulties	12.3 (5.48)	11.0 (5.97)	t(207)=1.61, p=.11
Emotional symptoms	2.9 (2.15)	2.6 (2.19)	t(207)=0.76, p=.45
Conduct problems	2.7 (2.0)	2.1 (1.80)	t(207)=2.08, p=.04
Hyperactivity/inattention	4.9 (2.20)	4.3 (2.44)	t(207)=1.58, p=.12
Peer relationship problems	2.0 (1.61)	1.9 (1.59)	t(207)=0.26, p=.79
Prosocial behaviour	6.5 (1.97)	6.9(1.87)	t(207)=1,54 p=.13

Comparisons were made with SDQ normative data and differences for the total difficulties, hyperactivity/inattention and prosocial behaviour scales were identified. The total SDQ scale normative value is 10.3 and the study sample mean was higher (11.8); for the hyperactivity/inattention normative value is 3.8 and the study sample mean is 4.7. There was a difference in the prosocial behaviour scale with children in the study sample reporting less (mean = 6.6) compared to the normative data mean (8.0). However, it should be noted that the study sample is an older group which could explain this variation (see Table 5.27).

5.8.2. Children's life satisfaction.

The majority of children reported, using the 10 step well-being ladder, that they were satisfied with their lives (mean = 7.5; SD = 1.76). Children in the two locations did not differ significantly in their mean scores (location 1: 7.38, sd 1.79; location 2: 7.62, sd 1.84, see Table 5.29).

Table 5.29. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of child life satisfaction

	Location 1	Location 2	t-test and significance
Life satisfaction	7.38 (1.71)	7.62 (1.84)	t(207) =.94; p=.35

5.8.3. Children's neighbourhood antisocial behaviour.

In response to the questions about neighbourhood antisocial behaviour most did not report any. Asked if their behaviour had led to a neighbour complaining 36/207 (17.4%) replied affirmatively, significantly more in site1 than site 2 (28/128, 21.9%, 8/79, 10.1%, $\chi^2(1) = 4.69$, p=.03). Slightly fewer (30/203, 14.8%) reporting being involved in a physically violent fight in the neighbourhood and this did not differ significantly by site (20/128, 15.6%, 10/75, 13.3%, $\chi^2(1) = .197$, n.s.).

5.8.4. Children's self-rated health.

Most of the children provided information about their health, the majority reported that their health was either good or very good (141, 69.1%) while only 17 (8.4%) said their health was either bad or very bad, the remainder (46, 22.5%) indicating that their health was fair, with no significant different between sites. With a possible score ranging from 1 to 5, the mean was 3.8 (SD = 0.95) with no difference between sites (see Table 5.30).

Table 5.30. Comparisons of mean scores (standard deviations in brackets) by location for children's perceptions of child self- rated health

	Location 1	Location 2	t-test and significance
Self-rated health	3.87 (.91)	3.78 (1.02)	t(202) =.63; p=.53

5.8.5. Children's perceived weight.

With 1 representing a perception of being underweight, 2 about right and 3 overweight the average score was 2.2, (SD = 0.49), with no significant difference between sites (see Table 5.31). The majority of respondents thought their weight was just right (146, 71.2%), with a small number believing that they were underweight (6, 2.9%) and the remainder (53, 25.9%) that they were overweight. This reflects the Department of Health statistics for child obesity at 28% (DOH, 2013).

Table 5.31. Comparisons of mean scores by location for children's perceptions of their weight (standard deviations in brackets)

	Location 1	Location 2	t-test and significance
Weight	2.19 (.50)	2.30 (.46)	t(203)=1.67, p=.10

5.8.6. Health enhancing behaviours.

Table 5.32. Extent to which children endorsed statements about their health behaviour, from 1 not important to 4 very important (percentages in brackets) and mean scores for health behaviour (range 1 to 4; standard deviations in brackets)

	1	2	3	4	Mean (SD)
How important is it for you to feel like you are in good shape?	16 (7.7)	62 (30.0)	54 (26.1)	75 (36.2)	2.9 (.98)
How important is it for you to keep yourself in good health all year round?	18 (8.7)	61 (29.5)	59 (28.5)	69 (33.3)	2.9 (.98)
How important is it to you to have good health habits about eating, exercise and sleep?	18 (8.9)	58 (28.7)	66 (32.7)	60 (29.7)	2.8 (.96)

Most children reported that it was important for them to feel in good shape and keep healthy (see Table 5.32) and the extent of agreement with the health related statements did not differ between the two sites (see Table 5.33), except for a trend for more respondents in site 2 to indicate that it was important for them to keep in shape (2.8, SD .99 vs. 3.1 SD .95, t(205) = 1.77, p=.08).

Table 5.33. Comparisons of mean scores by location for children's perceptions of health enhancing behaviours (standard deviations in brackets)

	Location 1	Locatio n 2	t-test and significance
How important is it for you to feel like you are in	2.82	3.06	t(207)=1.77

good shape?	(1.00)	(.95)	, p=.08
How important is it for you to keep yourself in good health all year round?	2.80 (.98)	2.97 (.97)	t(205)=1.24 , p=.22
How important is it to you to have good health habits about eating, exercise and sleep?	2.81 (.98)	2.87 (.93)	t(200)=0.42 , p=.67

5.8.7. Avoidance of adverse health risk behaviours.

Children reported on their drinking and smoking and most indicated that they never smoked (167/209, 79.9%) while just over half said that they had never drunk alcohol (118/208, 56.7%) with a small proportion (11/208, 5.3%) reported having had 6 or more drinks in the last month, (see Tables 5.34, 5.35). Only 19 (9.1%) of children had smoked more than a few times and the same number (19, 9.1%) had drunk 4 or more alcoholic drinks in the last month. Drinking alcohol did not differ between sites. However smoking was more likely in location 1 than location 2 (29/130, 22.3%, 13/79 16.5%, $\chi^2(3) = 9.264$, p=.03). Adding the two items together, a higher score means more avoidance of health risk behaviours and this did not differ by location (See Table 5.36).

Table 5.34. Avoidance of adverse health risk behaviour- responses to question about smoking behaviour

Have you ever smoked a cigarette (not just a few puffs)		
	N	%
More than a few times	19	9.1
A few times	10	4.8
Yes only once	13	6.2
No never	167	79.9
Total	209	100.0

Table 5.35. Avoidance of adverse health risk behaviour- responses to question about alcohol intake

How often have you had a drink containing alcohol in the last month		
	N	%
6 or more drinks	11	5.3

4-5 drinks	8	3.8
1-3 drinks	71	34.1
none	118	56.7
Total	208	100.0

Table 5.36. Comparisons of mean scores by location for children's avoidance of adverse health behaviours by site (standard deviations in brackets)

	Mean	Location 1	Location 2	t-test and significance
Have you ever smoked a cigarette (not just a few puffs)	3.67 (.86)	3.56 (0.91)	3.58 (1.01)	t(207) =.15; p=.88
How often have you had a drink containing alcohol in the last month	3.42 (.80)	3.42 (0.78)	3.43 (0.84)	t(206) =.10; p=.92
Combined smoking and drinking	6.99 (1.52)	6.98 (1.45)	7.01 (1.63)	t(206) =.17; p=.87

5.9 Summary of the descriptive statistics results

The descriptive analysis provided an initial summary of the results of the study which informed the next stage of analysis. The participants' individual items scores for each measure e.g. sense of belonging were aggregated to create robust psychological scales which were then standardised (see Table 5.37).

Table 5.37. Neighbourhood, Peer, Parent and Individual psychological scales

	No. of questions	**Survey question**
Neighbourhood sense of belonging	4	2,5,6,7
Neighbourhood Collective efficacy(social cohesion)	4	9,12,13,14
Neighbourhood felt support	3	8,10,11,

Neighbourhood Volunteering	4	15,16,17,18
Parental Support	4	22,23,24,25
Parental Involvement	6	26,27,29,30,32,33
Peer support	2	49,50
Peer positive health modelling	3	46,47,48
Neighbourhood antisocial behaviour & crime	2	39,40
Adverse health risk behaviours	2	35,37
Enhancing health behaviours	3	43,44,45

For the four aspects of neighbourhood context, more than half of the children reported a strong sense of belonging and felt support from neighbours; and more than half also reported good social connectedness for people in the neighbourhood. The exception was for trusting people in the neighbourhood, more than half were undecided or disagreed. Analysis by location revealed significant differences, with location 2 more likely to endorse their neighbourhood for sense of belonging, and social connectedness (except for no significant difference for knowing your neighbours well). In contrast for neighbourhood felt support, 55.1% of children agreed there were lots of neighbourhood people they could go to if they needed help, but responded less felt

support for visiting and borrowing food from neighbours; there was no significant difference between locations.

This analysis informed the next step to examine further the relationships between the four neighbourhood measures and adolescents' health and well-being outcomes. The t-test analysis revealed location as an important factor for a number of the neighbourhood contexts which directed further examination. Descriptive analysis of the neighbourhood deprivation measure, found significant differences between the two locations and therefore subsequent analysis included the factor, the indices of neighbourhood deprivation (IMD, 2000).

The influence of parents and peer support within the neighbourhood was discussed in chapter 2, The descriptive analysis of peer support revealed the importance of friends for youth's health and well-being, there was no significant difference between locations. The majority of children reported more rather than less parental support and there were no differences between location 1 and 2. The children responses varied about the items for parental involvement and there were differences between sites, this will be investigated further in the next step of analysis.

The mental health sale can be represented as a continuous variable and descriptive analysis revealed the study SDQ results mirrored the norm statistics (Goodman, 1997) with only one difference by site for conduct problems; children in location 1 had significantly more conduct problems. The analysis directed further statistical modelling to include the total mental health scale and sub scales, and to explore further the relationships between location and conduct problems.

Descriptive analysis of the measures found no difference in location for children's life satisfaction, self-rated health, perceived weight, health enhancing behaviours and adverse health risk behaviours such as smoking and drinking. This informed the next

steps of analysis to include further examination of these health and well-being outcomes but not by location.

The majority of children did not report antisocial behaviour and this requires future analysis to be treated with caution. The analyses by site did reveal in site 1 a difference for more youth's behaviour leading to a neighbour complaining, but the sample in site 1 was small (n= 28; site 2 n=10).

The descriptive analysis informed the next steps of informing the following research questions:

Research question 2 - What aspects of social and structural neighbourhood both positive and negative components e.g. social support and deprivation relate to adolescent health and well-being?

Research question 4 - What is the influence of the ethnic background on adolescent health and well-being?

Research question 5 – what are the underlying processes within the neighbourhood which influence adolescent health and well-being?

To further examine the relationships between the independent variables (neighbourhood structural and social characteristics; parent and peer support) and the health and well-being outcomes, Pearson correlation statistics were used to compute bivariate correlation coefficients.

5.10. Correlational analysis

The next step off analysis involved obtaining correlation coefficients between the multiple covariates. Pearson's correlation coefficients were calculated driven by the research questions detailed in section 5.7.2, the following variables were included: Dependent variables: the dependent variables of interest were socio-emotional development (SDQ, Goodman, 1997); Subjective well-being (Adamson, 2007); Health outcomes (self-rated health; perceived weight, and adverse health risk behaviours).

Independent variables: The analysis included the independent neighbourhood variables (IMD; and the neighbourhood constructs (neighbourhood sense of belonging, felt support and social connectedness).

The microsystem independent variables representing family and peers were also included (parental support and involvement; peer control and support).

5.10.1. The neighbourhood, adolescent psychological adjustment, life satisfaction and antisocial behaviour

5.10.1.1. Relationships between neighbourhood, family and peers and child psychological adjustment.

Based on correlational analyses, children from the more deprived neighbourhoods were more likely to have a higher total problem score on the SDQ and more likely to have emotional symptoms, conduct problems and peer problems (see Table 5.38). Less neighbourhood social cohesion and less neighbourhood support were also associated with a significantly higher likelihood of more problems in total and in particular more conduct problems and hyperactivity.

The analysis also suggests a relationship between the deprivation measure and the neighbourhood social variables, social cohesion and sense of belonging but not felt support (see Table 5.38).

Table 5.38. Associations between neighbourhood characteristics and SDQ total difficulties and subscale scores (N=209)

	1	2	3	4	5	6	7	9	10
1. SDQ total difficulties									
2. Emotional symptoms	.71**								
3. Conduct problems	.79**	.35**							
4. Hyperactivity	.73**	.23**	.60**						
5. Peer problems	.61**	.44**	.30**	.15**					
6. Prosocial behaviour	.31**	.02	-.39**	-.30**	-.26**				
7. IMD rank	-.16*	-.15*	-.10	-.09	-.16*	.10			
9. Social cohesion	-.38**	-.22**	-.36**	-.29**	-.20**	.17*	.16*		
10. Sense of belonging	-.31**	-.19**	-.29**	-.24**	-.16*	.03	.18*	.54**	
11. Felt support	-.21**	-.09	-.18*	-.21**	-.11	.04	-.03	.59**	.45**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Children who described more perceived parent support were significantly less likely to have behavioural difficulties in total and all four types of problem and more likely to show prosocial behaviour (see Table 5.39). More parent involvement in their activities was associated with fewer problems in total, fewer conduct problems and hyperactivity, and more prosocial behaviour (see Table 5.39).

More peer support and more peer health modelling were associated with fewer conduct problems, less hyperactivity, better psychological adjustment in total and more prosocial behaviour but were unrelated to emotional symptoms (see Table 5.39).

Table 5.39. Associations between children's perceptions of parents and peers and SDQ total difficulties and subscale scores (N=209)

	Parent Support	Parent Involvement	Peer Support	Peer Health Modelling
1.SDQ total difficulties	-.38**	-.22**	-.16*	-.14*
2.Emotional symptoms	-.23**	-.06	.03	-.00
3.Conduct problems	-.35**	-.29**	-.18**	-.22**
4.Hyperactivity	-.26**	-.19**	-.15*	-.17*
5. Peer problems	-.25**	-.10	-.19**	-.02
6.Prosocial behaviour	.29**	.26**	.29**	.23**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.40. Associations between children's perceptions of parents and peer support and health modelling (N=209)

	1	2	3
1. Parent support			
2. Parent involvement	.39**		
3. Peer support	.10	.18**	
4. Peer health modelling	.18**	.21**	.17**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

More peer health modelling was associated with more parent and peer support, and parent involvement (see Table 5.40). The two parent predictors of involvement and

support were also positively associated. There was no relationship between parent and peer support (see Table 5.40).

5.10.1.2. Psychological adjustment gender and ethnic group.

Comparison of means by gender for SDQ total difficulties and the sub-scales found girls with, on average, more psychological adjustment problems, emotional difficulties and more prosocial behaviour than boys (see Table 5.41) but no significant differences for the other subscales, hyperactivity, conduct problems and peer problems.

Table 5.41. Comparison of mean scores for gender and SDQ total difficulties and subscale scores (standard deviations in brackets)

	Mean	t-test and significance
SDQ total difficulties	Boys = 10.76 (5.41) Girls = 12.90 (5.79)	t(207) = -2.76, p = <.01
Emotional symptoms	Boys = 1.91 (1.80) Girls = 3.68 (2.15)	t(195.4) = -6.46, p = <.001
Hyperactivity	Boys = 4.65 (2.38) Girls = 4.65 (2.22)	t(207) = 0.32, n.s.
Conduct problems	Boys = 2.48 (1.92) Girls = 2.40 (1.93)	t(207) = 0.32, n.s.
Peer problems	Boys = 1.73 (1.52) Girls = 2.13 (1.67)	t(207) = -1.80, n.s.
Prosocial behaviour	Boys = 6.28 (1.93) Girls = 6.99 (1.89)	t(207) = -2.69, p = <.01

Comparison of means for ethnic group and SDQ total difficulties and the sub-scales found no significant differences for SDQ total difficulties and the subscales (see Table 5.42).

Table 5.42. Comparison of mean scores for Ethnic group and SDQ total difficulties and subscale scores (standard deviations in brackets)

	Mean	t-test and significance
SDQ total difficulties	White = 11.45 (5.91) Non-White = 12.50 (5.17)	t(207) = -1.24, n.s.
Emotional symptoms	White = 2.72 (2.12) Non-White = 2.85 (2.27)	t(195.4) = -0.41, n.s.
Hyperactivity	White = 4.46 (2.44) Non-White = 5.04 (1.93)	t(207) = -1.73, n.s.
Conduct problems	White = 2.33 (1.90) Non-White = 2.66 (1.96)	t(207) = -1.16, n.s.
Peer problems	White = 1.91 (1.65) Non-White = 1.96 (1.50)	t(207) = -0.20, n.s.
Prosocial behaviour	White = 6.77 (1.92) Non-White = 6.32 (1.97)	t(207) = 1.55, n.s.

5.10.2. Predictors of psychological adjustment (SDQ).

5.10.2.1. A systematic relationship and regression modelling approach

Multiple linear regression was selected to test the theoretical model and to analyse factors affecting adolescent outcomes outcomes in response to research questions 2 and 4, The method of entering the variables into the model was blockwise entry. Predictors were selected based on past work and the researcher entered the predictors into the model based on previous research about the influence of variables to youth's health and well-being. The order of entering the predictors into the regression models was based on ecological theory (Bronfenbrenner, 1979), first neighbourhood structural deprivation (IMD rank) was entered, followed by the

neighbourhood social cohesion (collective efficacy and sense of belonging), thirdly the peer predictors and then the family variables were included. Finally the individual constructs of volunteering, gender and ethnic group were entered. The neighbourhood, family and peers served as predictor variables with child health and well-being the dependent variables.

Individual variables: The following individual fixed effects were included in the regression modelling:

- Gender
- Ethnic group
- Individual neighbourhood volunteering

The neighbourhood, family and peers served as predictor variables for child health and well-being the dependent variables.

Assessment of regression assumptions, casewise diagnostics (criterion value set at 2) and analysis of multicollinearity revealed no problems. Multicollinearity was assessed in two ways, first a scan of the correlation matrix to consider predictors which were highly correlated (0.80 or 0.90), secondly a review of the tolerance statistic VIF. The regression results revealed VIF scores below 10 and the tolerance statistic higher than .01, therefore the researcher concluded it was appropriate to report the regression models statistics.

5.10.2.2. Predictors of psychological adjustment and subscales.

The final regression to predict children's psychological adjustment based on total SDQ difficulties indicated a significant model ($F(4, 202) = 19.73$, $p < .0001$) explaining 28% of the variance (see Table 5.43). More difficulties were likely with more neighbourhood deprivation, less neighbourhood social cohesion and also with less peer and parent support. Neighbourhood social cohesion and parent support were the most important

predictors. Taking neighbourhood, peer and parent factors into account, girls reported more psychological problems than boys.

5.10.2.3. Emotional symptoms

Significant predictors of more emotional symptoms were, more neighbourhood deprivation, less neighbourhood social cohesion and also less parental support with the final model ($F(4,202)=18.39$, $p<.0001$) accounting for twenty seven per cent of the variance. Parent support was the strongest predictor (see Table 5.44). Taking other factors into account girls were likely to report more emotional difficulties than boys.

5.10.2.4. Conduct

Research question 2 was to inform the role of negative and positive neighbourhood phenomena on adolescent well-being. For child conduct problems, neighbourhood deprivation was not a significant predictor, more neighbourhood social cohesion and more parent support were significant predictors for fewer conduct problems, (see Table 5.45). The model was significant $F(2,204)=26.37$, $p<.0001$ and the final regression model accounted for twenty one per cent of the variance (see Table 5.45). Peer support was a significant predictor in model 3, but was not significant in further models ($\beta= -.01$, n.s.). Volunteering as a predictor was at trend level ($\beta= -.13$, $p= .06$).

5.10.2.5. Peer Problems

More neighbourhood deprivation, location and less parent and peer support were significant predictors of more peer problems in model 3, $F(7,191)=5.14$, $p<.0001$) with the model accounting for thirteen per cent of the variance (see Table 5.46).

Social connectedness failed to be a significant predictor in the final model with more neighbourhood deprivation, location and less parent and peer support in the final model, $F(5, 201)=8.17$, $p<.0001$) accounting for seventeen per cent of the variance (see Table 5.46). Gender was relevant for peer problems with girls more likely to report problems than boys in the final model.

5.10.2.6. Hyperactivity

Less neighbourhood social cohesion predicted more hyperactivity and inattention which, with parental support (see Table 5.47), accounted for twelve per cent of the variance, $F(2, 204)=14.41$, $p<.0001$. Neighbourhood deprivation and neighbourhood volunteering (to inform research question 2) were not supported as predictors.

5.10.2.7. Prosocial

Analysis of the regression output to predict prosocial behaviour suggested neighbourhood deprivation and social connectedness were not significant predictors. More helping behaviour was associated with more neighbourhood volunteering, more parent and peer support ($F(3 ,202)=13.22$, $p<.0001$); explaining together sixteen per cent of the variance (see Table 5.48). Support from parents and peers were the most influential predictors for more caring and empathetic child behaviour (see Table 5.48).

Table 5.43. Stepped multiple regression models to predict SDQ total difficulties

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.17	(.00, .00)	-.15	(.00, .00)	-.16	(.00, .00)	-.19*	(.00, .00)	-.15*	(.00, .00)
Location	-.01	(-2.19, 1.97)	.06	(-1.27, 2.67)	.07	(-1.04, 2.73)	.07	(-1.04, 2.73)		
Neighbourhood social										
Social cohesion			-.36**	(-2.97, -1.09)	-.32**	(-2.71, -.89)	-.30**	(-2.56, -.77)	-.21**	(-1.9, -.51)
Felt support			-.01	(-1.00, .85)	.05	(-.67, 1.16)	.04	(-.68, 1.08)		
Parents and peers										
Peer support					-.11	(-1.35, .12)	-.15*	(-1.58, -.10)	-.17*	(-1.66, -.28)
Parent support					-.30**	(-2.42, -.88)	-.30*	(-.96, -.43)	-.31**	(-2.44, -1.06)
Parent involvement					.01	(-.75, .83)	.01	(-.73, .82)		
Child										
Ethnic group							-.05	(-2.18, 1.01)		
Gender							.23**	(1.18, 3.97)	.23**	1.26, 4.00)
Volunteering							-.08	(-1.14, .27)		
R^2	**.03***		**.16****		**.26****		**.31****		**.28****	
ΔR^2 Change	**.03***		**.13****		**.10****		**.05****			
Model F	**(2, 196) = 3.30**		**(4, 194) = 9.38**		**(7,191) = 9.48**		**(10,188) = 8.48**		**(4, 202) = 19.73**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.44. Stepped multiple regression models to predict SDQ emotional symptoms

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.19*	(.00, .00)	-.18	(.00, .00)	-.18	(.00, .00)	-.25*	(.00, .00)	-.14**	(.00, .00)
Location	.06	(-.56, 1.05)	.10	(-.37, 1.22)	.11	(-.29, 1.29)	.15	(-.94, 1.40)		
Neighbourhood social										
Social cohesion			-.22*	(-.86, -.10)	-.23*	(-.88, -.11)	-.17*	(-.73, -.02)	-.15*	(-.59, -.06)
Felt support			-.01	(-.12, .14)	.07	(-.08, .18)	.03	(-.10, .14)		
Parents and peers										
Peer support					-.08	(-.14, .48)	-.01	(-.32, -.26)		
Parent support					-.22**	(-.79, -.14)	-.21**	(-.75, -.15)	-.19**	(-.68, -.15)
Parent involvement					.06	(-.21, .46)	.06	(-.18, .43)		
Child										
Ethnic group							-.01	(-.61, .65)		
Gender							.42**	(1.26, 2.357)	.41**	(1.27, 2.23)
Volunteering							-.06	(-.61, .65)		
R^2	**.03**		**.07****		**.11****		**.28****		**.27****	
ΔR^2 Change	**.03**		**.04****		**.04****		**.16****			
Model F	**(2, 196) = 2.78**		**(4, 194) = 3.70**		**(7,191) = 3.45**		**(10,188) = 7.17**		**(4, 202) = 18.39**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.45. Stepped multiple regression models predicting the SDQ conduct problems subscale

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.03	(.00, .00)	.01	(.00, .00)	.01	(.00, .00)	-.03	(.00, .00)		
Location	-.13	(-1.22, .22)	-.07	(-.95, .43)	-.05	(-.86, .45)	-.03	(-.80, .55)		
Neighbourhood social										
Social cohesion			-.36**	(-1.03, -.37)	-.31**	(-.90, -.27)	-.31**	(-.91, -.27)	-.30**	(-.80, -.32)
Felt support			.05	(-.23, .41)	.09	(-.14, .49)	.11	(-.11, .53)		
Parents and peers										
Peer support					-.14*	(-.52,- .01)	-.12	(-.50, .03)		
Parent support					-.25**	(-.75, -.21)	-.24**	(-.73, -.19)	-.28**	(-.78, -.30)
Parent involvement					-.08	(-.42 .13)	-.07	(-.41, .14)		
Child										
Ethnic group							-.06	(-.80, 1.25)		
Gender							.02	(-.40, .59,		
Volunteering							-.13	(-.51, -.0.01)		
R^2	**.02**		**.13****		**.23****		**.25**		**.21****	
ΔR^2 Change	**.02**		**.11****		**.11***		**.02****			
Model F	**(2, 196) = 2.17**		**(4, 194) = 7.21**		**(7,191) = 8.34**		**(10,188) = 6.27**		**(2, 204) = 26.37**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.46. Stepped multiple regression models to predict SDQ peer problems

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.26**	(.00, .00)	-.24**	(.00, .00)	-.25**	(.00, .00)	-.30**	(.00, .00)	-.30**	(.00, .00)
Location	.15	(-.09, 1.05)	.19*	(.04, 1.18)	.19*	(.05, 1.15)	.19*	(-.80, .55)	.20*	(.10, 1.20)
Neighbourhood social										
Social cohesion			-.22**	(-.61, -.07)	-.20*	(-.57, -.04)	-.16	(-.52, .02)		
Felt support			.01	(-.26, .28)	.06	(-.15, .35)	.04	(-.24, .32)		
Parents and peers										
Peer support					-.15*	(-.46,- .03)	-.19**	(-.52, -.08)	-.19**	(-.52, -.10)
Parent support					-.25**	(-.61, -.16)	-.25**	(-.61, -.17)	-.24**	(-.59, -.18)
Parent involvement					.11	(-.07, .40)	.11	(-.05, .41)		
Child										
Ethnic group							.05	(-.30, .65)		
Gender							.18**	(.14, .97)	.20*	(.21, 1.04)
Volunteering							-.04	(-.27, .15)		
R^2	**.04***		**.08****		**.13****		**.19****		**.17****	
ΔR^2 Change	**.04***		**.04****		**.08****		**.03***			
Model F	**(2, 196) =3.98**		**(4, 194) = 4.40**		**(7,191) = 5.14**		**(10,188) = 4.48**		**(5, 201) = 8.17**	

Note Simultaneous model 5 include only variable significant at the P<.10 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.47. Stepped multiple regression models to predict SDQ hyperactivity

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.07	(.00, .00)	-.07	(.00, .00)	-.07	(.00, .00)	-.05	(.00, .00)		
Location	-.08	(-1.22, .49)	.02	(-.93, .74)	.02	(-.89, .75)	.02	(-.76, .94)		
Neighbourhood social										
Social cohesion			-.21*	(-.88, -.08)	-.17*	(-.78, .02)	-.18*	(-.82, -.02)	-.24**	(-.96, -.36)
Felt support			-.10	(-.63, .16)	-.08	(-.57, .22)	-.07	(-.55, .24)		
Parents and peers										
Peer support					-.13	(-.61,- .03)	-.13	(-.64, .03)		
Parent support					-.15*	(-.68, -.01)	-.14*	(-.65, .03)	-.21*	(-.78, -.17)
Parent involvement					-.05	(-.46, .23)	-.06	(-.50, .20)		
Child										
Ethnic group							-.11	(-1.25, .19)		
Gender							.02	(-.52, .74)		
Volunteering							.01	(-.30, .33)		
R^2	**.02**		**.10****		**.15****		**.16****		**.12****	
ΔR^2 Change	**.02**		**.08****		**.05****		**.01**			
Model F	**(2, 196) =1.72**		**(4, 194) = 5.11**		**(7,191) = 4.67**		**(10,188) = 3.48**		**(2, 204) = 14.41**	

Note Simultaneous model 5 include only variable significant at the P<.10 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.48. Stepped multiple regression models to predict SDQ prosocial behaviour

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	.05	(.00, .00)	.04	(.00, .00)	.03	(.00, .00)	.03	(.00, .00)		
Location	.05	(-.52, .90)	.03	(-.59, .85)	.32	(-.54, .79)	.02	(-.59, .76)		
Neighbourhood social										
Social cohesion			.13	(-.10, -.58)	.05	(-.23, .41)	.07	(-.19, .45)		
Felt support			-.04	(-.42, .26)	-.08	(-.47, .17)	-.12	(-.54, .10)		
Parents and peers										
Peer support					.27**	(.26, .77)	.21**	(.14, .67)	.23**	(.20, .69)
Parent support					.24**	(.18, .72)	.23**	(.16, .70)	.24**	(.22, .72)
Parent involvement					.07	(-.15, .41)	-.06	(-.17, .70)		
Child										
Ethnic group							.06	(-.33, .82)		
Gender							.12	(-.06, .94)		
Volunteering							.16*	(.05, .55)	.15*	(.03, .53)
R^2	**.09**		**.02**		**.18****		**.22****		**.16****	
ΔR^2 Change	**.01**		**.01**		**.16****		**.04***			
Model F	**(2, 196) =0.84**		**(4, 194) = 0.95**		**(7,191) = 5.88**		**(10,188) = 5.22**		**(3, 202) = 13.22**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

5.10.3. Summary of neighbourhood, peers and family predictors for psychological adjustment sub scales

The regression analysis in response to research question 2 suggested more neighbourhood deprivation predicted more total child problems, more emotional symptoms and peer problems. However, neighbourhood deprivation did not predict hyperactivity, conduct problems or more helping behaviour. Location was only significant for peer problems with children in the more deprived neighbourhood reporting more peer problems. The social neighbourhood processes were relevant for psychological adjustment, with more local social cohesion predicting fewer problems in total, fewer emotional, conduct problems and hyperactivity but not peer problems or prosocial behaviour. Social cohesion was the most powerful predictor for conduct and hyperactivity problems. Children who participated in neighbourhood volunteering exhibited more caring behaviour and the family variable, parent support was a powerful predictor in the models for total psychological adjustment and the subscale emotional symptoms (see Figure 5.1). The results to explore research question 4 - What is the influence of the ethnic background on adolescent health and well-being? suggested for this sample of adolescents, ethnic group was not a significant influence on psychological adjustment and the sub scales.

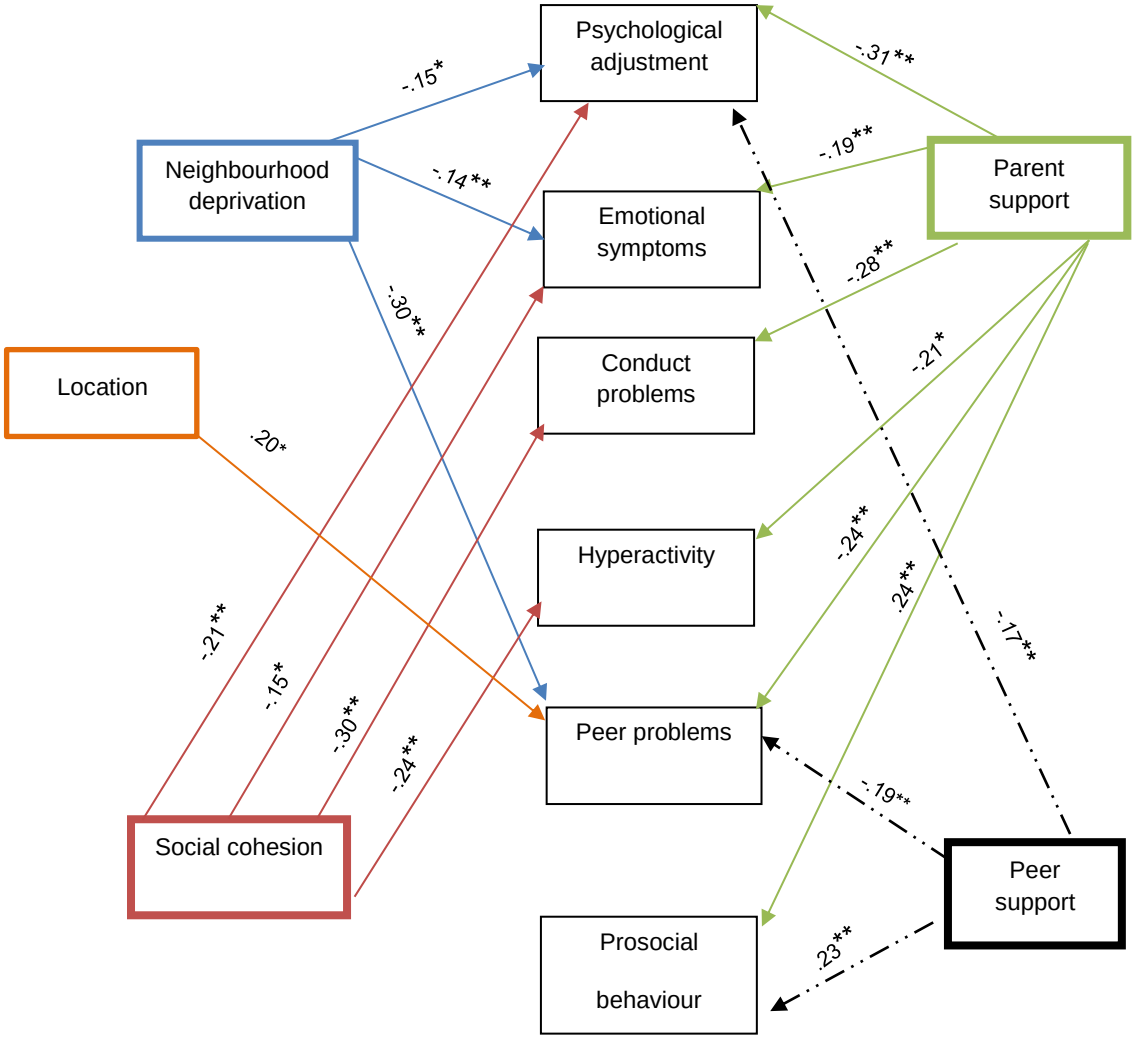


Figure 5.1 Neighbourhood and microsystem beta coefficients (*p<.05, **p<.01) for total psychological adjustment, emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial behaviour (excludes individual level factors)

5.11. Relationships between neighbourhood, family and peers and life satisfaction.

The neighbourhood characteristics were significantly related in bivariate correlations to children's view of how happy they were with their lives. Less deprivation ($r = .15$, $p<.05$), more perceived neighbourhood social cohesion (collective efficacy ($r = .31$, $p<.01$) and more felt neighbourhood support ($r = .19$, $p<.01$) were all associated with more life satisfaction. More parent involvement ($r = .18$, $p<.01$) and more parent support ($r = .37$, $p<.01$) were also associated with more life satisfaction and more

peer health modelling ($r = .17$, $p<.05$) but not peer support ($r = .06$) or neighbourhood volunteering ($r = .13$). Comparison of means by gender for life satisfaction found boys perceived their well-being to be higher compared to girls, $t(207) = 3.2$, $p = <.01$. The results comparing the means by ethnic group for life satisfaction were non-significant (see Table4.9)

Table 5.49 Comparison of mean scores for Ethnic group and life satisfaction (standard deviations in brackets)

	Mean	t-test and significance
Life satisfaction	White = 7.51 (1.87) Non-White = 7.40 (1.52)	t(207) =0.44, n.s.

5.11.1. Predictors of Life satisfaction.

The final regression to identify significant predictors of life satisfaction based on the well-being ladder, indicated significant prediction for neighbourhood deprivation, neighbourhood social cohesion, parent support and gender (model 4), ($F(4,202) = 6.34$, $p <.0001$) (see Table 5.50). Twenty four per cent of the variance in children's life satisfaction was explained. More neighbourhood social cohesion and more parent support were the most important predictors of greater life satisfaction. In line with the emotional adjustment regression (see section 5.10.2) boys were likely to report greater life satisfaction than girls. Model 4 suggests the relevant factors for

adolescents being more satisfied with their lives are lower neighbourhood deprivation, more neighbourhood social cohesion and increased parent support but not neighbourhood volunteering. Social cohesion in the local neighbourhood was more relevant than overall deprivation of the resident population for adolescents' life satisfaction. In the final model social cohesion and parent support were significant predictors but not neighbourhood deprivation, $F=(4, 202) = 15.92$, $p < .0001$(see table 5.50) and explained twenty four per cent of the variance.

Table 5.50. Stepped multiple regression models to predict life satisfaction based on the well-being ladder

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	.15	(.00, .00)	.13	(.00, .00)	.13	(.00, .00)	.17*	(.00, .00)	.09	(.00, .00)
Location	.01	(-.60, .69)	-.04	(-.74, .50)	-.06	(-.82, .38)	-.09	(-.92, .28)		
Neighbourhood social										
Social cohesion			.30**	(.22, .82)	.27**	(.18, .76)	.24*	(.13, .70)	.23**	(.19, .63)
Felt support			.02	(-.26, .33)	-.05	(-.37, .21)	.03	(-.34, .22)		
Parents and peers										
Peer support					.01	(-.24, .23)	.03	(-.19, .29)		
Parent support					.29**	(.26, .75)	.29**	(.25, .74)	.31**	(.33, .77)
Parent involvement					.03	(-.21, .30)	.02	(-.21, .28)		
Child										
Ethnic group							.01	(-.50 .53)		
Gender							-.22*	(-1.22, -.32)	-.22*	(-1.19, -.33)
Volunteering							.10	(-.05, .41)		
R^2	**.02**		**.12***		**.20****		**.25****		**.24****	
ΔR^2 Change	**.02**		**.09****		**.08****		**.05****			
Model F	**(2, 196) =2.44**		**(4, 194) = 6.39**		**(7,191) = 6.82**		**(10,188) = 6.34**		**(4, 202) = 15.92**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

5.11.2. Relationships between neighbourhood, family and peers with neighbourhood antisocial behaviour.

More neighbourhood antisocial behaviour by children in the neighbourhood was significantly associated with less parent and peer support ($r = -.19$, $p<.01$; $r = -.24$, $p<.01$, respectively). Boys were likely to report more antisocial behaviour than girls ($r = -.15$, $p<.05$). Interestingly there was no significant relationship between the structural and social aspects of the neighbourhood and antisocial behaviour (IMD $r = -.04$; social cohesion $r = -.12$; felt support $r = .07$) or neighbourhood volunteering ($r = .07$).

5.11.3. Neighbourhood, peers and family predictors of neighbourhood antisocial behaviour.

Comparison of means by gender for antisocial behaviour found boys anti-social behaviour to be higher compared to girls, $t(190.37) = 2.09$, $p= <.05$.

For ethnic group there were no significant differences in antisocial behaviour for the two groups, (see Table 5. 51)

Table 5.51. Comparison of mean scores for Ethnic group and anti-social behaviour (standard deviations in brackets)

	Mean	t-test and significance
Anti-social behaviour	White = 2.34 (0.65) Non-White = 2.29 (0.54)	t(207) =0.57, n.s.

For predictors, in response to research question one, more local antisocial behaviour was predicted by less social cohesion, more felt support, less peer and parent support (see Table 5.52) with the final model accounting for seventeen per cent of the variance ($F(6,186)=6.17$, $p<.0001$). Boys were more likely to report antisocial behaviour than girls.

Table 5.52. Stepped multiple regression models to predict neighbourhood antisocial behaviour

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.05	(.00, .00)	.01	(.00, .00)	-.01	(.00, .00)	-.03	(.00, .00)		
Location	-.06	(-.30, .16)	-.04	(-.28, .18)	-.04	(-.28, .17)	-.08	(-.33, .12)		
Neighbourhood social										
Social cohesion			-.27*	(-.27, -.05)	-.22*	(-.24, -.03)	-.23*	(-.25, -.03)	-.26*	(-.26, -.06)
Felt support			.21	(.02, .24)	.25*	(.04, .26)	.24*	(.04 .25)	.27*	(.07, .27)
Parents and peers										
Peer support					-.18*	(-.21,- .03)	-.17*	(-.20, -.16)	-.17*	(-.20, -.02)
Parent support					-.19*	(-.21, -.02)	-.21*	(-.22, -.03)	-.21*	(-.22, -.05)
Parent involvement					-.04	(-.12 .07)	-.05	(-.12, .07)		
Child										
Ethnic group							-.08	(-.08, .31)		
Gender							-.14*	(-.34, .01)	-.15*	(-.35, -.01)
Volunteering							.15*	(.01, .18)	.12*	(-.01, .16)
R^2	**.01**		**.05***		**.13****		**.17****		**.17****	
ΔR^2 Change	**.01**		**.04**		**.08****		**.04***			
Model F	**(2, 189) = 0.94**		**(4, 187) = 2.67**		**(7,184) = 3.96**		**(10,181) =3.78**		**(6, 186) = 6..17**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

5.12. The neighbourhood, adolescent health and health behaviours

5.12.1. Relationships between neighbourhood, family and peers and self-rated health, health behaviours and weight.

Neighbourhood deprivation was not significantly associated in bivariate correlations with the child health (self-rated health, weight, health enhancing behaviours and avoiding adverse health risk behaviours, see Table 5.53). In contrast to neighbourhood deprivation, the neighbourhood social processes (social cohesion collective efficacy, sense of belonging, felt support and volunteering) were positively related to self-rated health. The social perspective of the neighbourhood was also significantly associated with some aspects of health; more social cohesion was associated with more health enhancing behaviours and less adverse health risk behaviour (alcohol use and smoking) (see Table 5.53).

More parent support and involvement were significantly associated with better self-rated health, more health enhancing behaviours and more avoidance of smoking or alcohol. More peer support and to a lesser extent peer health modelling were also significantly associated with better health behaviours (see Table 5.53).

Comparison of means by gender were calculated, girls rated their general health lower than boys and more girls responded than boys that they were overweight (see Table 5.54). For ethnic group the comparison of means indicated no significant difference for any of the health items (see Table 5.55).

Table 5.53. Associations between neighbourhood characteristics, family, peers and health and health behaviours (N=209)

	General health	Weight	Health enhancing behaviours	Avoiding adverse risk health behaviours
IMD rank	-.11	.09	.08	-.05
Social Cohesion	.21**	-.18**	.19**	.21**
Felt support	.21**	-.12	.03	.06
Parent Support	.35**	-.12	.15*	.29**
Parent Involvement	.12	-.06	.20**	.21**
Peer Support	.11	.07	.26**	.20**
Peer Health Modelling	.18*	-.04	.08	.16*
Neighbourhood volunteering	.21**	-.06	.06	.24**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.54. Comparison of mean scores by gender for general health, weight, health enhancing behaviours and avoiding adverse risk health behaviours (standard deviations in brackets)

	Mean	t-test and significance
General health	Boys = 4.03 (.94) Girls = 3.63 (.93)	t(202) = 3.05, p = <.01
Weight	Boys = 2.13 (.42) Girls = 2.33 (.54)	t(184.9) = -3.00, p = <.01
Health enhancing behaviours	Boys = 8.72 (2.31) Girls = 8.54 (2.68)	t(191.9) = 0.51, n.s.
Avoiding adverse risk health behaviours	Boys = 7.16 (1.33) Girls = 6.81 (1.68)	t(203) = -3.02, n.s.

Table 5.55. Comparison of mean scores by ethnic group for general health, weight, health enhancing behaviours and avoiding adverse risk health behaviours (standard deviations in brackets)

	Mean	t-test and significance
General health	White = 3.83 (0.97) Non-White = 0.92 (0.11)	t(207) =0.00, n.s.
Weight	White = 2.25 (0.51) Non-White = 2.19 (0.43)	t(207) = 0.72, n.s.
Health enhancing behaviours	White = 8.53 (2.39) Non-White = 8.86 (2.69)	t(207) = -0.90, n.s.
Avoiding adverse risk health behaviours	White = 6.93 (1.52) Non-White = 7.12 (1.51)	t(207) = -0.85 n.s.

5.12.2. Predictors of health and health behaviours and weight

Multiple regression analyses to predict adolescent health, health behaviours and weight are detailed in sections 5.7.4.2.1 to 5.7.4.2.3; (see Figure 5.2 for a schematic of the neighbourhood, microsystem predictors on adolescents' outcomes). Neighbourhood deprivation failed to be a significant predictor for the health and weight outcomes.

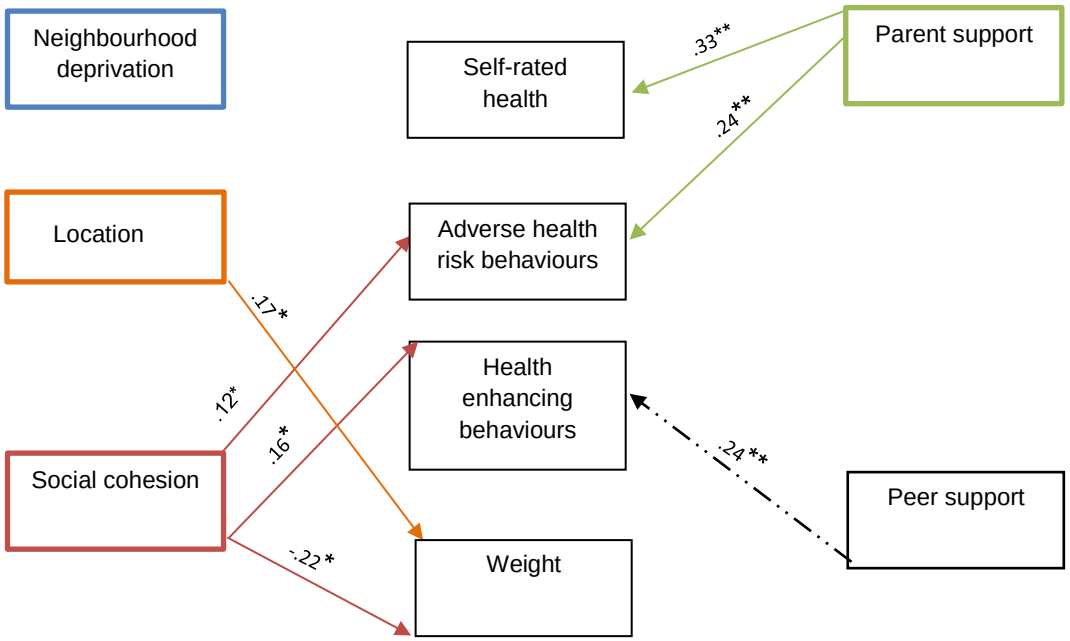


Figure 5.2 Neighbourhood and microsystem beta coefficients (*p<.05, **p<.01) for health, health behaviours and weight excluding individual level factors).

5.13.1. Predictors of self-rated health.

Neighbourhood deprivation was omitted as a predictor for child health as earlier analysis showed no significant relationships in Models 1 to 4. (see Table 5.56). Taking other factors into account neighbourhood social processes (research question 2) were not significant predictors though they had been significantly associated in correlational analysis (see Table 5.53). In the final model children who participated in neighbourhood volunteering exhibited more self-rated health with parent support and gender (boys reported better health) the significant predictors. The final model accounted for twenty two per cent of the variance $F(3,197)=17.94$, $p<.001$ (see Table 5.56).

5.13.2. Neighbourhood predictors of weight perception.

More social cohesion was a significant predictor, increasing the likelihood of weight being perceived as ‘just right’. Neighbourhood deprivation was not a significant

predictor (clarifying factors relevant to weight for research question 2) but children living in location 2 perceived they were more overweight. Gender was associated with weight (girls perceived they were more overweight compared to boys; see Table 5.57). Model 4 accounted for fourteen per cent of the variance $F(10,186) = 3.08$, $p<.05$ (see Table 5.57). The final model with predictors location and social cohesion accounted for ten per cent of the variance with girls perceiving they were more overweight, $F(3, 201) = 7.55$, $p<.05$.

Table 5.56. Stepped multiple regression models to predict self-rated health

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.14	(.00, .00)	-.13	(.00, .00)	.12	(.00, .00)	-.08	(.00, .00)		
Location	.05	(-.27, .44)	.01	(-.35, .35)	-.02	(-.37, .31)	-.07	(-.47, .20)		
Neighbourhood social										
Social cohesion			.15	(-.02, .30)	.13	(-.04, .28)	.10	(-.06, .25)		
Felt support			.11	(-.06, .26)	.03	(-.13, .19)	.04	(-.12, .19)		
Parents and peers										
Peer support					.04	(-.09, .17)	.08	(-.05, .21)		
Parent support					.32**	(.16, .43)	.30**	(.14, .41)	.33**	(.08, .17)
Parent involvement					-.07	(-.20, .08)	-.05	(-.19, .08)		
Child										
Ethnic group							.07	(-.14, .42)		
Gender							-.27**	(-.74, -.25)	-.26**	(-.71, -.25)
Volunteering							.14*	(.01, .25)	.17*	(.05, .28)
R^2	**.01**		**.07***		**.15****		**.24****		**.22****	
ΔR^2 Change	**.01**		**.05***		**.09****		**.08****			
Model F	**(2, 192) =1.31**		**(4, 190) = 3.33**		**(7,187) = 4.87**		**(10,184) = 5.68**		**(3, 197) = 17.94**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.57. Stepped multiple regression models to predict weight perception

N=209	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	.02	(.00, .00)	.04	(.00, .00)	.04	(.00, .00)	.01	(.00, .00)		
Location	.10	(-.09 .27)	.14*	(-.04, .32)	.16*	(-.02, .34)	.21*	(-.02, .36)	.17*	(.03, .31)
Neighbourhood social										
Social cohesion			-.25*	(-.21, -.03)	-.25*	(-.21, -.03)	-.23*	(-.20 -.02)	-.22*	(-.17, -.04)
Felt support			.03	(-.07, .10)	.03	(-.07, .10)	.02	(-.08, .10)		
Parents and peers										
Peer support					.13	(-.01, .14)	.09	(-.03, .12)		
Parent support					.28	(.22, .72)	-.11	(-.12, .02)		
Parent involvement					-.08	(-.11, .03)	-.08	(-.11, .03)		
Child										
Ethnic group							-.02	(-.17, .13)		
Gender							.22*	(.08, .35)	.21*	(-17, -.04)
Volunteering							-.08	(-.11, .03)		
R^2	**.01**		**.06***		**.09**		**.14***		**.10***	
ΔR^2 Change	**.01**		**.05***		**.03***		**.05****			
Model F	**(2, 194) =1.30**		**(4, 192) =3.25**		**(7,189) = 2.66**		**(10,186) = 3.08**		**(3, 201) = 7.55**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

5.13.3. Neighbourhood and microsystem predictors for health behaviours.

Neighbourhood deprivation and location were not significant predictors for either of the two types of health behaviours. Neighbourhood social cohesion was a predictor of taking care of their health and exercising and of less drinking and smoking (see Table 5.58; 5.59). Children who volunteered in the neighbourhood were less likely to engage in adverse health behaviours but there was no significant influence for health enhancing behaviours. The microsystem predictors, peer support (for positive health behaviours) and parent support (for avoiding drinking and smoking) were also significant predictors and peers support was relevant as a trend in model 4, (β=.14, $p<.06$) for avoiding drinking and smoking. The final model to predict health enhancing behaviour explained ten per cent of the variance with social cohesion and peer support the only significant predictors $F(2,199)=10.40$, $p<.0001$ (see Table 5.58). For avoiding drinking and smoking the final model accounted for sixteen per cent of the variance, $F(4, 200)=9.18$, $p<.05$, and more adverse health behaviours were likely for boys compared to girls (see Table 5.59).

Table 5.58. Stepped multiple regression models to predict positive health behaviours

N=209	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.02	(.00, .00)	-.06	(.00, .00)	-.07	(.00, .00)	-.04	(.00, .00)		
Location	.11	(-.09 .27)	.08	(-.54, 1.32)	.08	(-.50, 1.29)	.10	(-.44, 1.42)		
Neighbourhood social										
Social cohesion			.27*	(.21,1.09)	.21*	(.07, .93)	.19*	(.01, .90)	.16*	(.08, .75)
Felt support			-.15	(-.80, .07)	-.16	(-.81, .04)	-.14	(-.77, .10)		
Parents and peers										
Peer support					.24*	(.25, .95)	.25*	(.28, 1.02)	.24**	(.28, .98)
Parent support					.07	(-.20, .53)	.08	(-.19, .55)		
Parent involvement					.10	(-.12, .62)	.10	(-.14, .06)		
Child										
Ethnic group							-.08	(-1.20, .38)		
Gender							-.06	(-.95, .41)		
Volunteering							-.03	(-.43, .26)		
R^2	**.01**		**.05***		**.14***		**.15**		**.10****	
ΔR^2 Change	**.01**		**.04***		**.09****		**.05****			
Model F	**(2, 191) =0.83**		**(4, 189) =2.55**		**(7,186) = 4.18**		**(10,188) = 3.10**		**(2, 199) =10.40**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 5.59. Stepped multiple regression models to predict avoidance of adverse risk health behaviours

N=209	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.10	(.00, .00)	-.14	(.00, .00)	-.14	(.00, .00)	-.10	(.00, .00)		
Location	.07	(-.36, .80)	.04	(-.46, .69)	.02	(-.48, .62)	.01	(-.53, .59)		
Neighbourhood social										
Social cohesion			.30**	(.18, .73)	.24*	(.10, .63)	.21*	(.06, .59)	.12*	(.01, .38)
Felt support			-.12	(-.45, .09)	-.16	(-.51, .01)	-.16	(-.51, .01)		
Parents and peers										
Peer support					.13	-.01, .42)	.14	(-.01, .43)		
Parent support					.24*	(.14, .59)	.23*	(.14, .58)	.24**	(.16, .56)
Parent involvement					.08	(-.11, .35)	.06	(-.13, .32)		
Child										
Ethnic group							-.01	(-.51, .43)		
Gender							-.16*	(-.90, -.08)	-.14*	(-.81, -.03)
Volunteering							.18*	(.07, .48)	.20*	(.11, .50)
R^2	**.01**		**.06***		**.16****		**.21***		**.16***	
ΔR^2 Change	**.01**		**.06***		**.10****		**.05****			
Model F	**(2, 195) = 0.56**		**(4, 193) = 3.17**		**(7,190) = 5.11**		**(10,187) =4.92**		**(4, 200) = 9.18**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

5.14. Mediators of child health and well-being outcomes

To examine the underlying processes (Research question 5) within the neighbourhood that may be important for child health and well-being pathway analysis was completed**.** Analyses of the indirect effects based on the significant inferential predictors were carried out to judge whether there were mediation effects between neighbourhood structural deprivation, social cohesion, parent and peer support and child outcomes.

Parent support was the most influential mediator for child outcomes between social cohesion, though the effects were small for predicting total psychological adjustment; adverse health risk behaviours and life satisfaction (see table 5.60).

Table 5.60. Parent support as a mediator between social cohesion and adolescent outcomes

Child outcome	Mediator	**β**	BS* confidence interval	Kappa-squared	BS* confidence interval
Psychological adjustment	Parent support	.081	-.152,-.31	.08	.032, .131
Emotional symptoms	Parent support	.019	-.040, -.005	.04	.012, .089
Conduct problems	Parent support	-.026	-.048, -.009	.07	.027, .122
Peer problems	Parent support	-.016	-.036, -.005	.05	.016, .107
Life satisfaction	Parent support	.026	.010, .052	.07	.030, .139
Adverse health risk behaviours	Parent support	.018	.005, .037	.06	.018, .115

* Boot Strapped

Earlier inferential analysis revealed peer support as a predictor for psychological adjustment (see Table 5.39) but this factor failed to be significant in the pathway analysis for all adolescent health and well-being outcomes.

For health there was a significant indirect effect of neighbourhood social cohesion and more self-rated health, through health enhancing behaviour; and peer health modelling, the effects were small (see Table 5.61).

Table 5.61. Health enhancing behaviours and peer health role modelling mediator relationships between social cohesion and adolescent self-rated health

Child outcome	Mediator	β	BS* confidence interval	Kappa-squared	BS* confidence interval
Self-rated health	Health enhancing behaviours	.006	.004, .001	.03	.001, .017
Self-rated health	Peer health modelling behaviour	.006	.001, .017	.03	.038, .078

*Boot strapped

Examination of mediator variables between neighbourhood deprivation and child outcomes revealed no mediating relationship for this sample for structural factors.

5.15. Summary of the chapter results

Study two was designed to illuminate the following research questions:

Research question 2 - What aspects of social and structural neighbourhood both positive and negative components e.g. social support and deprivation relate to adolescent health and well-being?

Research question 4 - What is the influence of the ethnic background on adolescent health and well-being?

Research question 5 – what are the underlying processes within the neighbourhood which influence adolescent health and well-being?

The results of the analysis and regression modelling suggested a complex picture for the neighbourhood predictors relevant for youth's health and well-being (question 2). The structural predictor neighbourhood deprivation (with other factors) was an important contributor, with less deprivation predicting fewer psychological adjustment, emotional symptoms and peer problems but not a predictor of life satisfaction, self-rated health, perceived weight and health behaviours. Location was important for two child outcomes; the rural village (location two) was a predictor of fewer peer problems, compared to the urban setting but adolescents' perception of being overweight were more likely in the rural setting. Examination of mediator variables (question 5) between neighbourhood deprivation and child outcomes did not reveal any mediating relationship.

A neighbourhood with more social connectedness was a significant predictor (with other factors) for a wide group of health and well-being measures. The results suggested children who lived in communities with more social cohesion fared better for psychological adjustment, fewer emotional symptoms, conduct problems, inattention and less antisocial behaviour but not fewer peer problems. A neighbourhood characterised by more social activity was also important for the positive youth outcomes of life satisfaction, perceptions of being the right weight, and better health behaviours but not self-rated health. Another form of social connectedness, neighbourhood civic engagement was important for protecting adolescents from less drinking and smoking and antisocial behaviour; children who

were involved in neighbourhood volunteering also reported better self-rated health. The analysis of the indirect effects suggested the mediators' health enhancing behaviours and peer health modelling were important for self-rated health with social cohesion, though the effects were small.

The microsystem family and friends support were significant predictors (with other factors) for better psychological adjustment and less antisocial behaviour. Parent support was the most influential predictor for six positive child outcomes; better total psychological adjustment, lower emotional symptoms, prosocial behaviour, life satisfaction, self-rated health and less drinking and smoking. The indirect relationship analysis suggested parent support was the most influential mediator between neighbourhood social cohesion and child outcomes, though the effects were small. There was an indirect effect of social cohesion through parent support for predicting total psychological adjustment; adverse health risk behaviours and life satisfaction (see table 5.60).

The other microsystem, peer support was also important for total psychological adjustment, with more peer support predicting not surprisingly fewer peer problems but also, less antisocial behaviour, more empathic behaviour and it was the most influential predictor for positive health behaviours.

The comparison of the influence of the neighbourhood and microsystem by gender varied across a number of adolescent outcomes. Girls fared less well than boys for six outcomes; total psychological adjustment, emotional symptoms, peer problems, life satisfaction and self-rated health. Girls were also more likely than boys to report that they perceived themselves to be overweight. Antisocial behaviour and more drinking and smoking was more likely for boys compared to girls.

The results to examine (research question 4) the importance of ethnic group for youth's health and well-being failed to find a relevance for adolescents' outcomes.

In summary the results may suggest different neighbourhood characteristics are relevant for different health and well-being outcomes. A neighbourhood displaying more social connectedness in this study was a predictor of higher scores for an array of health and well-being outcomes. However the structural factor neighbourhood deprivation failed in this study to be a predictor for any of the health outcomes, life satisfaction and anti-social behaviour. In contrast, adolescents residing in a more deprived neighbourhood were more likely to have more psychological adjustment difficulties and problems with peers. This picture is further complicated by the result that the although the average deprivation differed between locations, it was only location (urban multicultural town compared to rural village) but not deprivation, that predicted children's perceptions of their weight; children living in the rural neighbourhood responded more often that they were overweight than those in the multicultural town. The results in this study suggest a complex picture and implies different aspects of the neighbourhood may be relevant for specific child outcomes.

CHAPTER 6

QUANTITATIVE STUDY 3 RESULTS

6.1. Parent study

Responses to parent questionnaires were received from 65 Location 1 parents (location 2 parents were not contacted). Questions covered their perceptions of the local neighbourhood and their involvement with their children's activities. A number of questions were the same as those asked of their children and these have been matched to enable parent-child comparisons.

6.1.1. Quality of the Neighbourhood

While just over half of the parents (52.3%) reported that their neighbourhood was a good or excellent place to live, only a minority of parents (16.9%) responded that their neighbourhood was a good or excellent place to bring up children (see Table 6.1).

Table 6.1. Parents' perceptions of the quality of their neighbourhood (N=65; percentages in brackets)

How do you feel about your neighbourhood…	Very poor 1	Poor 2	Average 3	Good 4	Excellent 5
as a place to bring up children?	4 (6.2)	25 (38.5)	25 (38.5)	8 (12.3)	3 (4.6)
as a place to live?	3 (4.6)	3 (4.6)	25 (38.5)	24 (36.9)	10 (15.4)

Just over half of the parents (38, 58.4%) reported that it was somewhat or very easy to notice strangers in the neighbourhood and only a small number (3, 4.6%) that it was very difficult. However their knowledge of local children was lower with

41 (63.1%) indicating that they knew none or a few with only a small proportion (9.2%) reporting that they knew very many (see Table 6.2).

Table 6.2. Parents' responses to questions about familiarity with people in the neighbourhood (N=65; percentages in brackets)

	Very difficult 1	Somewhat difficult 2	Somewhat easy 4	Very easy 4
How easy is it to notice strangers round here?	3 (4.6)	24 (36.9)	24 (36.9)	14 (21.5)
	None 1	A few 2	Many 3	Very many 4
How many children do you know to say hello to, who live in your neighbourhood?	2 (3.1)	39 (60.0)	18 (27.7)	6 (9.2)

6.1.2. Parents' neighbourhood sense of belonging.

There was a fairly strong sense of belonging expressed by the parents. About three quarters (48/65, 73.8%) thought of themselves as similar to other people in the neighbourhood with a similar number reporting that they felt they belonged (51/65, 78.5%). The majority (59/65 (90.8%) also indicated that they felt loyal to their neighbourhood. The mean for the three items, asked as dichotomous questions for parents (range 3 to 6) was close to the maximum at 5.43 (SD=.98).

6.1.3. Parents' neighbourhood felt support.

Parents' responses indicated that they perceived substantial local social support. About two thirds (44/65, 67.7%) thought that they could go to other local people if

they needed help. Nearly half responded they would borrow food from a neighbour (31/65, 47.7%). However socialising was less common and only a third (22/65, 33.8%) indicated that they visited neighbours in their homes. The mean score for the three items, dichotomous for parents (range 3 to 6) was 4.49 (SD = 1.13)

6.1.4. Parents' neighbourhood collective efficacy.

Asked four questions about local networks, more than three quarters reported that local people were generally friends (52/65, 80.0%) and that neighbours were willing to help other neighbours (54/65, 83.1%), with slightly fewer endorsing the statement that they knew their neighbours quite well (48/65, 73.8%) and people in the neighbourhood could be trusted (47/65, 72.3%). The mean score for the four items, dichotomous for parents (range 4 to 8) was 7.09 (SD = 1.10).

6.1.5. Parents' neighbourhood informal social control.

Only just over half the parents (34/64, 53.1%) responded that it was likely or very likely that neighbours would intervene if a child was seen skipping school and hanging about in the neighbourhood or intervene if a fight broke out, with slightly more that it was likely a neighbour would intervene if they saw a local child spraying graffiti (39/64, 60.7%) or if a local child was showing disrespect to an adult (45/64, 70.3%; see Table 6.3). The mean total score for the four items (range 4 to 16) was 11.02 (SD= 2.99).

Table 6.3. Parents' views on the likelihood of local neighbourhood informal social control (N=64, percentages in brackets)

	very unlikely 1	unlikely 2	likely 3	very likely 4
Neighbours would intervene if children were skipping school and hanging out on a street corner	6 (9.4)	24 (37.5)	25 (39.1)	9 (14.0)
Neighbours intervene if children were spray painting graffiti on a local building	5 (7.8)	20 (31.3)	19 (29.7)	20 (31.0)
Neighbours would intervene if children were showing disrespect to an adult	4 (6.3)	15 (23.4)	32 (50.0)	13 (20.3)
Neighbours would intervene if a fight broke out in front of your neighbour's home	6 (9.4)	24 (37.5)	25 (39.1)	9 (14.0)

6.1.6. Microsystem - Family management - parent involvement

All of the parents responded they talked to their child about daily plans and what they had done that day, and also all indicated that they told their child what time they were expected home. Almost two thirds (41/64, 64.1%) responded that there were some children they would not let their child be with.

6.1.7. Adolescent gender and ethnicity

Comparison of means by gender for SDQ total difficulties and sub-scales found girls with on average, more emotional difficulties and more prosocial behaviour than boys (see Table 6.4) but conversely boys were more likely to have hyperactive behaviour

than girls. There were no significant differences for the other subscales, conduct problems and peer problems or the total difficulties score (see Table 6.4).

Table 6.4. Comparison of mean scores for gender and SDQ total difficulties and subscale scores (standard deviations in brackets)

	Mean	t-test and significance
SDQ total difficulties	Boys = 11.79 (4.79) Girls = 13.07 (5.34)	t(63) = 1.02, n.s.
Emotional symptoms	Boys = 1.79 (1.47) Girls = 4.30 (2.38)	t(39.97) = 4.85, p = <.001
Hyperactivity	Boys = 5.18 (2.26) Girls = 4.07 (1.77)	t(63) = 2.12, p = <.01
Conduct problems	Boys = 3.03 (1.94) Girls = 2.52 (1.78)	t(63)= 1.08, n.s.
Peer problems	Boys = 1.84 (1.70) Girls = 2.11 (1.55)	t(63) = 0.65, n.s.
Prosocial behaviour	Boys = 6.08 (1.92) Girls = 7.30 (1.66)	t(63) = 1.02, p = <.01

There were no significant differences in any SDQ scores comparing by ethnic group (white or non-white) (see Table 6.5).

Table 6.5. Comparison of mean scores for Ethnicity and SDQ total difficulties and subscale scores (standard deviations in brackets)

	Mean	t-test and significance
SDQ total difficulties	White = 12.29 (4.91) Non-White = 12.35 (5.23)	t(63) = 0.05, n.s.
Emotional symptoms	White = 2.59 (2.06) Non-White = 3.10 (2.47)	t(63) = 0.90, n.s.
Hyperactivity	White = 4.68 (2.44) Non-White = 4.77 (1.86)	t(207) = 0.18, n.s.
Conduct problems	White = 2.12 (1.57) Non-White = 2.71 (1.70)	t(207) = 0.43, n.s.
Peer problems	White = 2.12 (1.57) Non-White = 1.77 (1.71)	t(207) = 0.85, n.s.
Prosocial behaviour	White = 6.29 (2.05) Non-White = 6.90 (1.70)	t(207) = 1.30, n.s.

6.1.8. Parent and their child comparisons of perceptions of the neighbourhood

Parents and their children responded to a number of identical questions concerning the neighbourhood and parent-child responses were compared. Note that for some questions the children were provided with five response options but parents were only asked for a yes/no response. Child responses 1 and 2 were coded as no, responses 4 and 5 as yes and response 3 input was coded based on other questions.

Research question 6: (a) do parents and their children agree about the neighbourhood? and (b) will adolescents in families with more parent and child agreement about neighbourhood collective efficacy report better health and well-being?

Agreement between parent and child about being similar to neighbours was 40/65 (61.5%), about belonging to the neighbourhood was 37/65 (56.9%) and about feeling loyal to the neighbourhood was 39/65 (60.0%). There was also agreement regarding felt support for 42 parent child pairs (64.6%) about whether they could go to a neighbour for help and about whether they visited with neighbours, with 40 pairs (61.5%) agreeing about whether they would feel comfortable borrowing food from a neighbour (see Table 6.5) but parent and child mean scores did not differ significantly (means: parents = 4.49, SD=1.1; children = 4.29, SD = 1.2, $t(64) = 1.24$, $p = .22$).

However parents were likely to feel a greater sense of belonging; in only 28 of the 65 child-parent pairs (43%) did both have identical scores (see Table 6.6) and parents' total scores (range 1-6) were likely to be significantly higher than that of their children (mean, parents = 5.43, SD = .98; children = 4.68, SD= 1.27; $t (64) = 4.23$ $p =<.001$, which was supported by a non-parametric test, $t = 3.60$, $p = .0001$.

Table 6.6. Parent and their child' scores for neighbourhood sense of belonging (identical agreement in bold)

	Child score				
Parent score	3	4	5	6	Total
3	**2**	1	0	2	5
4	3	**2**	1	2	8
5	3	2	**1**	0	6
6	10	7	6	**23**	46
Total	18	12	8	27	65

Agreement for 28/65, 43.1%

There was substantial agreement regarding felt support in the neighbourhood with 42 parent child pairs (64.6%) agreeing about whether they could go to a neighbour for help and about whether they visited with neighbours (see table 6.7), with 40 pairs (61.5%) agreeing about whether they would feel comfortable borrowing food from a neighbour but parent and child mean scores did not differ significantly (means: parents = 4.49, SD=1.1; children = 4.29, SD = 1.2, t(64) = 1.24, p = .22).

Table 6.7. Parent and their child' scores for neighbourhood felt support (identical agreement in bold)

	Child score				
Parent score	3	4	5	6	Total
3	**7**	6	3	0	16
4	7	**7**	0	4	18
5	5	2	**2**	5	14
6	2	6	1	**8**	17
Total	21	21	6	17	65

Agreement for 24/65, 36.9%

Child-parent agreement about local collective efficacy was generally high with agreement as follows: local people are friends 44/65 (67.7%), people are willing to

help neighbours 39/65 (60%), neighbours are known quite well 47/65 (72.3%) and local people can be trusted 40/65 (61.5%). However, only 24 child-parent pairs had an identical total collective efficacy score and the parents were likely to have a higher score (see Table 6.8) (means: parents =7.09, SD=1.1; children = 6.48, SD=1.6; $t(64) = 3.09$, $p = <0.05$). This result was supported by a non-parametric test, $t = 2.86$, $p = .004$.

Table 6.8. Parent and their child' scores for neighbourhood collective efficacy (identical agreement in bold)

	Child score					
Parent score	4	5	6	7	8	Total
4	**1**	1	0	0	0	2
5	0	**2**	0	0	2	4
6	2	6	**0**	1	3	12
7	1	3	4	**2**	5	15
8	4	4	3	2	**19**	32
Total	8	16	7	5	29	65

Agreement 24/65, 36.9%

6.2. Family agreement about the neighbourhood and child health and well-being outcomes.

Research question 6: (a) do parents and their children agree about the neighbourhood? and (b) will adolescents in families with more parent and child agreement about neighbourhood collective efficacy report better health and well-being?

The child neighbourhood collective efficacy score was subtracted from the parent score to create an agreement/difference score, with a minus value indicating that the child's score was higher, while a positive value indicated that the parent's score

was higher. More than one third (N=24) had total agreement but if there was disagreement it was more likely that the parents rated collected efficacy as higher (N=29) while in fewer families (N=12) the child rated the neighbourhood as having more collective efficacy (see Table 6.9). A scale was calculated to represent the extent of disagreement, ignoring its direction, with a range from 0 to 4, , a higher score indicated more parent and child disagreement about collective efficacy (see Table 6.10).

Table 6.9. Parent and their child's agreement about neighbourhood collective efficacy (Minus score indicates child score is higher)

	N	%
-3	2	3.1
-2	3	4.6
-1	7	10.8
0	24	36.9
1	12	18.5
2	8	12.3
3	5	7.7
4	4	6.2
Total	65	

Table 6.10. Parent and child disagreement about neighbourhood collective efficacy scale, a higher score indicating more disagreement

Number	%
0	**24**
1	**19**
2	**11**
3	**7**
4	**4**
Total	**65**

Parent and child disagreement about neighbourhood collective efficacy was significantly associated in bivariate correlations with total psychological difficulties and the SDQ sub scales, conduct and peer problems (more disagreement relating to more problems) but not emotional symptoms, prosocial behaviour or hyperactivity or (see Table 6.11). Parent and child disagreement about collective efficacy did not relate significantly to self-rated health, weight or life satisfaction so no further analyses were conducted for these child outcomes (see Table 6.12)

Table 6.11. Associations (Pearson correlation coefficients) between the disagreement of parents with their children about collective efficacy, neighbourhood deprivation and child peer and parent support with SDQ total difficulties and subscale scores (N=65)

	Parent & child disagreement about collective efficacy	Neighbourhood deprivation	Peer Support	Parent support
Emotional symptoms	.07	-.33**	.06	-.24
Conduct problems	.38**	-.07	-.40**	-.14
Hyperactivity/ inattention	.15	-.04	-.28*	-.13
Peer problems	.27*	-.16	-.27*	-.36**
Prosocial behaviour	-.22	.15	.51**	.32*
SDQ total	.32**	-.24*	-.32*	.18

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 6.12 Associations (Pearson correlation coefficients) between the disagreement of parents with their children about collective efficacy, neighbourhood deprivation and child peer and parent support with child life satisfaction, health and weight (N=65)

	Parent and child disagreement about neighbourhood collective efficacy	Neighbourhood deprivation	Peer Support	Parent support
Life satisfaction	-.12	.27*	.32*	.24
Self-rated health	.23	-.04	.14	.35**
Weight	-.15	-.03	-.08	.11

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

6.3. Predictors of psychological adjustment

More neighbourhood deprivation, less child-parent agreement about neighbourhood collective efficacy and less parent and peer support were significant predictors or more total psychological problems ($F(5, 55) = 7.59$, $p<.05$). The final model explained forty one per cent of the variance. Taking other factors into account girls were likely to report more psychological problems than boys (see Table 6.13).

6.3.1. Predictors of SDQ subscale peer problems

Less child-parent agreement about neighbourhood collective efficacy and less parent support was the only significant predictors for more peer problems, ($F(2,59) =9.52$; $p=.001$) (see Table 6.14). The final model accounted for twenty four per cent of the variance.

6.3.2. Predictors of SDQ subscale conduct problems

Less child-parent agreement about neighbourhood collective efficacy less peer support were the only significant predictors of more conduct problems (see Table 6.15) $F(2, 61) = 8.91$, $p<.001$, the final model accounted for twenty three percent of the variance.

Table 6.13.Summary of regression analysis including parent and child disagreement about neighbourhood collective efficacy, predicting SDQ total difficulties

N=62	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.25	(.00, .00)	-.23	(.00, .00)	-.23*	(.00, .00)	-.21*	(.00, .00)	-.21*	(.00, .00)
Neighbourhood social										
Collective efficacy disagreement			.32**	(.34, 2.29)	.31*	(.30, 2.25)	.30*	(.24, 2.23)	.30	(.29, 2.17)
Parents and peers										
Peer support					-.17	(-1.23,-21)	-.28*	(-1.64, -.06)	-.28*	(-1.61, -.10)
Parent support					-.36*	(-1.26, -.30)	-.33*	(-1.18, -.23)	-.33*	(-1.17, -.23)
Parent involvement					.01	(-.96, .96)	.02	(-.88, .99)		
Child										
Ethnic group							.01	(-2.26, 2.16)		
Gender							.26*	(.30, 4.90)	.26*	(.33, 4.87)
R^2	**.06***		**.17***		**.35****		**.41***		**.41***	
ΔR^2 Change	**.05***		**.14***		**.31****		**.35***			
Model F	**(1, 59) = 4.08**		**(2, 58) = 5.88**		**(4, 56) = 7.59**		**(6,54) = 6.01**		**(5, 55) = 7.59**	

Note Simultaneous model 5 include only variable significant at the p<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 6.14.Summary of regression analysis including parent and child disagreement about neighbourhood collective efficacy, predicting peer problems

N=62	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.16	(.00, .00)	-.14	(.00, .00)	-.13	(.00, .00)	-.12	(.00, .00)		
Neighbourhood social										
Collective efficacy disagreement			.28*	(.05, .70)	.33*	(.09, .76)	.35*	(.11, .80)	.34*	(.15, .75)
Parents and peers										
Peer support					-.05	(-.29, .20)	-.12	(-.39, .15)		
Parent support					-.39*	(-.44, -.11)	-.36*	(-.41, -.09)	-.40**	(-.43, -.12)
Child										
Ethnic group							-.10	(-1.092, .43)		
Gender							.22	(-.09,1.50)		
R^2	**.02**		**.11***		**.27***		**.32**		**.24****	
ΔR^2 Change	**.01**		**.08***		**.22***		**.25***			
Model F	**(1, 59) = 1.60**		**(2, 58) = 3.47**		**(4, 56) = 5.18**		**(6,54) = 4.30**		**(2, 59) = 9.52**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

Table 6.15.Summary of regression analysis including parent and child disagreement about neighbourhood collective efficacy predicting conduct problems

N=62	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Variable	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI	**β**	95% CI
Neighbourhood structural										
IMD	-.09	(.00, .00)	-.07	(.00, .00)	-.08	(.00, .00)	-.07	(.00, .00)		
Neighbourhood social										
Collective efficacy disagreement			.37*	(.19, .94)	.24*	(-.02, .75)	.29*	(.01, .86)	.27*	(.06, .79)
Parents and peers										
Peer support					-.31*	(-.64, -.05)	-.31*	(-.69, -.02)	-.31*	(-.63, -.099)
Parent support					.12	(-.29, .10)	-.11	(-.29, .12)		
Child										
Ethnic group							-.072	(-1.18, .69)		
Gender							.05	(-.78, 1.17)		
R^2	**.01**		**.14****		**.25****		**.26***		**.23****	
ΔR^2 Change	**.01**		**.11***		**.20****		**.18**			
Model F	**(1, 59) = 055**		**(2, 58) = 4.78**		**(5, 56) = 4.71**		**(6,54) = 3.14**		**(2, 61) = 8.91**	

Note Simultaneous model 5 include only variable significant at the P<.05 in one of the five stepped regression models.
†p<.10, *p<.05, **p<.01

6.4 Summary

In response to research question 6 (a) do parents and their children agree about the neighbourhood? while there was agreement for more than half the parent-child pairs about many aspects of the neighbourhood overall, when there were differences, parents were likely to be more positive about neighbourhood characteristics than their children. Child-parent agreement was not significantly different for neighbourhood felt support, conversely, sense of belonging and collective efficacy were significantly different with parents likely to rate these two neighbourhood characteristics higher compared to children.

In response to research question 6 (b) will adolescents in families with more parent and child agreement about neighbourhood collective efficacy report better health and well-being? The regression modelling suggested parent-child agreement about the collective efficacy available in their local neighbourhood was important for psychological adjustment, more disagreement was a marginal predictor of more problems overall, and a significant predictor of more peer problems and more conduct problems. This suggested (research question 6 (b) more parent and child agreement about neighbourhood collective efficacy may be a protective factor, contributing to positive emotional adjustment. It may also suggest that youth who experience problems with peers or who have challenging behaviour may be less likely to reach out to neighbourhood support networks or other aspects of the local neighbourhood.

CHAPTER 7

Discussion

7.1 Introduction

Bronfenbrenner's ecological theory of development (1979) emphasised the critical importance of looking at potential influences beyond the family (one of the proximal influences, called microsystems) to consider more distal influences, called exosystems (e.g. the neighbourhood and behaviour of neighbours) and macrosystems (e.g. cultural beliefs and practices). He also indicated that it was important to probe for interconnections between the micro- and exosystems (the mesosystems). This perspective of examining a combination of different contexts surrounding the child is now more often reported in developmental studies (Cooke, 2003) and evidence has accumulated to support Bronfenbrenner's (1979) ecological model. It has been found that neighbourhood structural characteristics (e.g. levels of deprivation; residential stability) and social characteristics (e.g. social cohesion; sense of belonging to a community), in conjunction with family and peer characteristics, are all relevant to children's development. Adolescents' health and well-being in particular can be linked to their structural and social environments. As teenagers develop, influences beyond the family environment become more critical and the contexts beyond the microsystem gain in importance. The present study is theoretically driven by ecological theory and examined multiple contextual factors relevant to children's health and well-being. This perspective views the lives of teenagers through a lens of the microsystem (family and peers) as well as the structural and social characteristics of a neighbourhood to illuminate the mechanisms involved in adolescent outcomes. Examination of these contexts and the bi-directional effects contributes to knowledge in this field. This approach enables the potential effects on children of living in differing socio-economic

communities to be explored and contributes to the literature by identifying specific neighbourhood characteristics most relevant for teenagers' health and well-being.

The underlying conception of the neighbourhood for this study is that of a system of resources and social structures embedded within geographical areas relevant for adolescent health and well-being. The study investigated a number of different contexts of potential relevance to child well-being and used a variety of methodologies to explore the interactions between the micro- and exosystems.

7.2 Methodological approach

The use of mixed methods research (MMR) has increased steadily over the last decade with many authors using this approach (Bryman, 2006) for psychological enquiry. The researcher in this study took a sequential procedural approach as the driving methodology for the studies, with an overriding principle of maintaining the integrity of the qualitative and quantitative approach (Morse, 2003). An objective in applying this methodological research perspective was to support understanding of the phenomena involved in the neighbourhood contexts important for children's health and well-being.

A strength of using both methodologies allows for triangulation (Denzin, 1970) of the data, this enabled cross checking findings from both methods (Deacon, 1998). An example of this was in study 1; the interviews with adolescents examined understanding of the survey language when describing the neighbourhood e.g. the substantive research into neighbourhood sense of belonging (Barnes, 2007; Gorman- Smith, Tolan & Henry, 2000) includes the word 'close-knit'. Adolescents in study 1 found interpreting the meaning of this word and the researcher changed the item to 'people where I live are friends with local people'.

The mixed methodologies provided emphasis on the neighbourhood contexts important for children's health and well-being. For example the regression

modelling identified the importance of family and peer support as well as living in a socially cohesive neighbourhood were important for children's happiness. The qualitative interviews driven by the adolescents' agenda provided deeper descriptions about what was relevant for their life satisfaction; Alisha (Chapter 4, section 4.2, p. 93):

> 'To make me happier I maybe do something that makes a change. Something I've always wanted to do is something that would make a difference to someone else's life. I was in charity work at one point but I know it doesn't pay well …. but if I can make a difference, make a change, to make things better … If I seem someone on the street like when they're selling Big Issue I always go buy one. People ask me but why? I goes, they're trying to do their best to get off the street at least there not sitting there waiting for somebody to take them. So I'd rather it be a protective world rather than one that's lazy.'

A further strength of a mixed method approach is the contribution to contextual understanding, coupled with the broad relationships from the variables uncovered in study 2. An example of this is the discussions in study 1 about social interactions and accessing neighbourhood resources. The adolescents' sense of self-agency as active participants of a community (see Chapter 4 pages 101,107,111,112) contributed to their well-being. This is further developed in Study 2 which suggested social cohesion is relevant for youth's psychological adjustment as well as positive health behaviours including less smoking and drinking. The mixed methodology in this research provides a richer and more 'dense' account of the relevance of the neighbourhood for youth's health and well-being.

A further advantage of this methodological approach was utility; a mixed method design provided opportunities for an applied focus. For example in both study 1

and Study 2 the contribution of volunteering was identified as a potential positive factor for adolescents' faring well. In the qualitative interviews Louan and Amy (see section 4.2,pages 92,93) discussed the importance of helping others for their life satisfaction and in study 2 youth who volunteered were less likely to smoke and drink and to have higher self-rated health. This has implications for parents, teachers, local health workers and other relevant groups to encourage youth to be involved in volunteering as this may link to better adolescent life satisfaction and health outcomes. A further benefit of a multimodal approach was to enable diverse methods, recognising the complexity of investigating adolescents situated within a neighbourhood and the influences on their health and well-being.

It is also important to consider the weaknesses and limitations in using mixed methods. A main criticism of this approach is the argument that research methodology is intrinsically rooted in epistemological and ontological perspectives and these perspectives cannot be reconciled in a mixed methodology. But the connection between research strategy and the epistemological and ontological perspectives is not deterministic. There is a tendency for each methodology to be associated with a theoretical perspective but these connections are not exact. To critique the bringing together of different methods in a study, would suggest research methods are instilled with specific epistemological and ontological commitments. The choice of a method embodies a set of assumptions about the nature of the phenomena under investigation. Harrits (2011) challenges the idea that 'MMR constitutes a coherent research paradigm … and the need to move forward to embracing differences instead of imposing homogeneity'.

A possible critique of the present study is the gap in considering the philosophical stances of the qualitative and quantitative studies as a whole. Greene and Hall (2010) in a review of mixed method studies discussed a range of views about the importance of the ontological assumptions in inquiry practice. A group of

researchers took the view that philosophical assumptions are really important and a further group of pragmatic researchers thought it important, to not really important; highlighting the different views.

The author in the present study took a pragmatist perspective. This perspective provided freedom to the researcher to choose the methods and techniques for the enquiry into youth's health and well-being. An example of this is the inclusion of thematic interview, survey study and a well-being index to explore children's happiness. A further driver was the view that the research in the rural village and multicultural town occurred within a social context. This approach opened the door for different worldviews and different assumptions including the different ways of collecting data and analysing the outcomes of the studies (Cresswell, 2003). The thematic analysis approach in study 1 was concerned with the generation rather than the testing of theories. The objective of study 1 was to seek for better understanding from adolescent's perspective of neighbourhood, friend and family and their happiness. Study 2 and 3 involved an inclusion of measures of social processes from multiple informants (child and parent) including social capital and peer influences which complemented the thematic interviews, and together strengthened the design, providing a fuller picture of the influences on adolescents' well-being. This approach was constructed to consider the multiple neighbourhood contexts for adolescent health and well-being in keeping with Ecological theory (Bronfenbrenner, 1979).

Neighbourhood structural information was gained from analysis of government statistics (ONS, 2014), adolescent and parent self-reports and qualitative child interviews. Neighbourhood level of deprivation and characteristics of the urban and rural locations; social cohesion; physical features; and support from family and friends were studied to examine the influences on adolescents' health and well-being. The results revealed that different aspects of the neighbourhood (subjective,

objective, structural, social) may be relevant for different child health and well-being outcomes. The connection between neighbourhood deprivation and children's health and well-being has attracted a lot of attention (Chen, 2006; Shaw & McKay, 1942). The role of neighbourhood deprivation (with structural and microsystem factors) in the present study found similarities and contrasts with the research literature.

7.3 Psychological adjustment

Adolescents' who lived in neighbourhoods characterised by less structural deprivation and more reported collective efficacy reported better emotional adjustment. However the picture varied for the influence of less neighbourhood deprivation and a more socially connected community for other child health and well-being outcomes.

Children who lived in the more urban town and in an area characterised by deprivation were more likely to have peer problems but the neighbourhood social processes were not important for friendship difficulties. In contrast, a socially cohesive neighbourhood was the most powerful predictor for less hyperactivity and conduct problems but in contrast to peer problems, neighbourhood deprivation failed to be influential for these negative behaviours. The adolescent's interviews provided further understanding about the importance of a community's social relationships for feeling supported, this included in Amy's 'talk' where she described a positive community characteristic as people 'sticking up for each other and pulling together' (Amy, section 4.5). This corresponds with other research findings that the psychosocial characteristics of the neighbourhood are important for child well-being (Aminzadeh, Denny, Utter, Milfont, Ameratunga, Teevale & Clark, 2013). Adolescents who believe their environments are characterised by higher levels of mutual trust, support and accessibility of resources are likely to fare

better emotionally and feel more satisfied with their lives (Sampson, 2003). The present study findings of a role for social cohesion for child inattention, supports a US study of 11-16 year olds (Zalot, 2009), which found neighbourhood characteristics moderated the effects of hyperactivity, impulsivity and attentional problems on conduct problems.

However, while more neighbourhood social cohesion predicted better adjustment in the current study, parent support was the most important predictor. Parents may feel more able to support their children in communities that provide support to both parents and adolescents through the presence of like-minded families, who also contribute to the neighbourhood in a more distal way by their interactions with other families (Dorsey & Forehand, 2003; Odgers et al., 2009). The current studies results suggested that children residing in communities where they feel a sense of belonging and trust in the neighbourhood feel similarly supported. A socially cohesive neighbourhood may support better outcomes by providing positive role models (Jencks & Mayer, 1990) and through residents exercising social control over the negative behaviour of youth and other local residents (Sampson et al., 1997).

The unpacking of the mechanisms that may be relevant to the link between neighbourhood deprivation and adolescent emotional adjustment failed to suggest social cohesion was a mediator between structural disadvantage and psychological problems. This contrasts with the research into protective effects of neighbourhood collective efficacy on UK children growing up in deprivation (Odgers et al., 2009). This may be due to the present study measures of neighbourhood social cohesion and structural deprivation failing to represent the influences important for interpreting the underlying pathways. Ingoldsby & Shaw, (2002) argued as children mature, neighbourhood effects are likely to be communicated through multifaceted, age dependent pathways.

The respondents in this study were aged from fourteen to fifteen. As adolescents increasingly become independent, they will spend more time in the neighbourhood and the environment may become more influential on their emotional and behavioural problems in the later teenage years. The findings of this investigation mirror the research into neighbourhood structural and social processes which places the interrelated contexts of neighbourhood and family as both being important for better child outcomes, (Leventhal & Brooks-Gunn, 2011; Rankin & Quane, 2002). However it is important to note that this cross-sectional study cannot determine whether neighbourhood characteristics are influencing well-being or whether adolescents with more problems perceive their neighbourhoods more negatively.

7.4 Problem behaviour and antisocial behaviour

There is substantial evidence (Leventhal & Brooks-Gunn, 2000; Trickett et al., 2003) that environments with more deprivation are likely to have more antisocial behaviour and crime, including more child and adolescent conduct problems. However, the present investigation did not support the relationship between neighbourhood deprivation, poorer child conduct problems and more neighbourhood antisocial behaviour. This may be related to the relatively low level of frequency of this type of problem in the sample, especially in the more advantaged location.

Living in the more deprived location (one), which was characterised by much more deprivation than location two, failed to be a predictor for conduct problems. Location one was a large industrial town with higher levels of deprivation, crime and violence compared to the smaller less deprived location two, a rural countryside village (UK CrimeStats, 2014). The lack of a relationship between structural factors and child conduct problems may have been due to insufficient

variability in the location characteristics within each location and the extent of deprivation. It may also be related to the way that deprivation was assessed. Government deprivation statistics may not capture fully the characteristics influential in this type of problem behaviour.

Family factors were also important for predicting child problem behaviours. Studies suggest children with high levels of conduct problems and hyperactivity experience more social failure due to the inability to behave in a way appropriate when interacting with peers, family and other situations (NICE, 2009). Dodge and Pettit (2003) discuss the importance of the social cultural context and parenting for more positive child behavioural problems. Sampson and Laub (1994) found two thirds of the effect of family poverty on child delinquency could be accounted for by parenting behaviour such as low supervision. In the present study adolescents reported that their parents provided more rather than less support, possible related to the volunteer nature of the sample. It is likely that families who were supportive were more likely to agree to their children being in the study, and agreeing to take part themselves. It is also plausible from the findings of this study that the family limited the impact of potentially harmful neighbourhood structural elements relevant to negative child behaviour but this would need further investigation with a larger sample, ideally with a wider range of parent support.

In addition to family factors, this study found more peer support predicted less delinquent behaviour. Most of the respondents thought their friends would stop them doing something that was not acceptable behaviour. Thus the more immediate influences of supportive, positive parenting and proactive peers appear to be more relevant than the neighbourhood characteristics, reflecting research which has identified the important role of deviant peer relationships in predicting antisocial behaviour (Ingoldsby, Shaw, Winslow, Schonberg, Gilliom & Criss, (2013).

Nevertheless, the cross-sectional nature of this study, the limited sample size and the small number of neighbourhoods included in the study would suggest the lack of a relationship between antisocial behaviour and the environment should be treated with caution.

In addition it is plausible that adolescents minimised the amount of neighbourhood anti-social behaviour, such as fighting due to social desirability, and given the opt-in nature of the sample those adolescents engaging in more antisocial or delinquent behaviour may simply not have taken part. The result may also reflect differing definitions of antisocial behaviour across studies. In the present investigation neighbourhood antisocial behaviour was represented by a child being involved in neighbourhood fighting or resulting in behaviour which caused a neighbour to complain. This narrow definition of neighbourhood antisocial behaviour may partly explain the lack of a relationship with structural and social features of the neighbourhood. In a study by Odgers et al., (2009) children's antisocial behaviour was assessed with a range of instruments which combined mother and teacher reports with children's behaviour; a more broad and comprehensive investigation than was possible in the present study.

A further limitation is a lack of knowledge about neighbourhood informal social control by local residents which is the group orientated behaviour thought to constrain deviant behaviours (Sampson et al., 1997). While it is unknown if local adults tried to control youth behaviour, adolescents in the less advantaged location were more likely to report that their parents limited who they could be with compared to the children living in the more advantaged location. However this relates only to children's perspectives about their parents' control over potential friends and not the wider community intervention which other research found to be relevant in reducing local antisocial behaviour (Sampson et al., 1997).

Aneshensel and Sucoff (1996), in a US study, argued that youth perceptions of a neighbourhood as dangerous and lacking social cohesion both contributed to more adolescent internalising problems. Looking at particular aspects of adolescent well-being in the present study, this was supported. Less neighbourhood deprivation, more social cohesion and increased family support were significant predictors of fewer child emotional symptoms. This suggests children who receive support from their parents and are able to access emotional support from a socially cohesive community are likely to fare better psychologically. It has been suggested these types of support may buffer the effects of deprivation (Hurd, Stoddard, & Zimmerman, 2013).

Children's emotional problems can be framed as internalising behaviour, with children experiencing feelings of worry, being scared and unhappy. It has been found that living in a neighbourhood characterised with more deprivation and less social cohesion may be associated with barriers for teenagers to access resources, for example by limiting their physical movement in the community due to concerns about safety and reduce the availability of support from neighbours and other sources of social capital (Cicognani, Albanesi & Zani, 2008; Coulton et al., 2007; Eriksson, Hochwalder & Sellstrom, 2011).The present investigation found some support for this from the qualitative interviews. The respondents were all from the more deprived location and they discussed their concerns about journeys to and from school and the extent to which they were allowed freedom of movement by parents, noting worries about safety and the impact on their lives of violent gangs in the area. A neighbourhood characterised by more violent crime and a poorer physical environment is likely to be more stressful for young people, posing a risk for more emotional symptoms.

7.5 Peers

Research suggests that the impact of neighbourhood crime is likely to be mediated by peers associations (Leventhal & Brooks-Gunn, 2000) but examination of the neighbourhoods' influence on peer relationships has not received as much attention (Stattin & Kerr., 2009). It is proposed that children who are unable to build supportive peer relationships are less likely to fare well than those with stable peer friendships (Leventhal & Brooks-Gunn, 2000) and peer support is thought to moderate neighbourhood effects on antisocial behaviour and substance abuse (Dubow, Edwards & Ippolito, 1997). Youth residing in neighbourhoods with more disadvantage have fewer prosocial friends and the extent of local collective efficacy has a strong effect on who teenagers associate with in the community (Rankin & Quane, 2002). The underlying mechanisms to explain peer relationship problems are complex but the family is central to adolescents developing supportive friendships in areas of more neighbourhood deprivation, often characterised by higher levels of crime.

The present study supported seminal research, that more neighbourhood deprivation would be linked with more peer relationship problems. In addition less parent support predicted more peer problems. The peer problem item scale included, peer rejection, bullying, isolation and preferring adult company to friends of a similar age. This may result in adolescents being more susceptible to neighbourhood risks (Jaccard, Blanton & Dodge, 2005). Interestingly, supporting the research by Rankin and Quane (2002), less perceived neighbourhood social cohesion was initially relevant for predicting more peer problems; and girls were likely to report more friendship difficulties than boys. However when support from parents and friends was included in the analysis, social connectedness was no longer a significant factor, demonstrating the particular relevance of the quality of other social contacts for developing relationships with peers..

7.6 Physical Health

In contrast to the significance of neighbourhood deprivation and social cohesion for emotional and behavioural adjustment, a different picture of the role of neighbourhood deprivation for child health and health behaviours was revealed. Neighbourhood deprivation failed in this study to be significant as a predictor of self-rated health, health behaviours or teenagers' perceptions of weight, but a neighbourhood displaying more social connectedness was relevant for better health outcomes as well as perceptions of being the right weight. Possibly, neighbourhoods offering more opportunities for social interactions also offer more activities or locations for health-related sport or other healthy behaviours.

There is a deficiency of studies exploring the impact of neighbourhood, family and deprivation and child health (Torsheim, Currie, Boyce, Kalnins, Overpeck & Hauglanda, 2004). A meta review of multilevel studies in high income countries including the US and Western Europe concluded that poor neighbourhoods have small to moderate effects on adolescent and child health and well-being (Sellstrom, 2006); other studies have found no relationship for self-rated health (Glendinning, Love, Hendry, & Shucksmith, 1992). However there is some evidence that children residing in disadvantaged communities are less healthy (Aneshensel & Sucoff, 1996).

Possible explanations for this may have been the use of the indices of deprivation, which is based on administrative data. Potentially better measures include a child-focussed measure, the Family Affluence Scale (Boyce, Torsheim, Currie, & Zambon, 2006) which uses youth self-report and is thought conceptually to relate to common indices of material deprivation (Carstairs & Morris, 1991). It should also be noted the present sample covered a small number of neighbourhoods and

despite the purposeful inclusion of disadvantaged areas the study may not mirror the residential characteristics relevant for chid health.

There may be relevant structural features of the neighbourhood that interact with neighbourhood deprivation, for instance residential stability (Gilman, & Huebner, 2003). In the present study comparing the locations, there were important differences in residential stability of the respondents; the participants in location one featured more long term residents and location two featured more children who had lived there for less than a year. It was not possible within location one to identify any predictors of child health, a larger sample would be needed. The quality of the services available in a neighbourhood is also said to be important (Sampson, Morenoff & Gannon-Rowley, 2002). Research suggests a direct relationship with less affluent neighbourhoods and the quality of schools and the availability of recreational activities (Ingoldsby & Shaw, 2002). This study did not capture directly the influence of unemployment and the additional neighbourhood characteristics which may partially explain the lack of an association between the neighbourhood structural qualities and child health.

However, in contrast to neighbourhood deprivation, the exosystem construct neighbourhood social cohesion was relevant for health outcomes. Children who perceived their communities as socially supportive described more positive health behaviours and reported less smoking and drinking of alcohol. Specifically, more positive health behaviours were likely for children residing in neighbourhoods characterised by both more collective efficacy and a sense of belonging. The relevance of social cohesion to health behaviours is interesting. Academics recognise the challenges to illuminating pathways of influence when examining the role of neighbourhood social capital and health and a variety of environmental pathways are proposed for effects on adult health. Kawachi (1999) suggested three plausible pathways, firstly through an influence on the health behaviours of

residents by the promotion of health information; secondly by endorsing healthy norms of behaviour such as physical exercise; and finally through social processes controlling negative health behaviours. Related to this, Sampson's et al., (1997) theory of collective efficacy argued that community cohesion and control of negative behaviours enable a neighbourhood to extract benefits for the community and to prevent deviant behaviours such as adolescent smoking and drinking. Social capital may improve child health and support better health behaviours through the development of psychosocial processes which provide affective support and reciprocity.

The present study results are interesting in identifying that more social cohesion (one component of social capital) was a predictor for adolescent more positive health behaviours and fewer negative health behaviours. Social capital has been associated with various adult health behaviours such as physical exercise, smoking (Lindstrom, Hanson & Ostergren, 2001) and alcohol consumption (Weitzman & Chen, 2005). Neighbourhood social capital may influence health behaviours in different ways, as exemplified in this study. Children who experienced more socially cohesive neighbourhoods and support from friends also took better care of their health and described more positive eating, exercise and sleeping behaviours. Adolescents living in communities with more social support, positive role modelling from adults and peers, and in neighbourhoods with safer environments may have more opportunities for children to exercise and adopt healthy behaviours. A New Zealand study by Utter (Utter, Denny, Robinson, Ameratunga & Milfont, 2011) found that areas characterised by strong neighbourhood social connections were especially important for youth's physical activity, supported by numerous other studies e.g. Molnar, Gortmaker, Bull & Buka 2004, reported other neighbourhood factors such as safety important for children's play.

The relationship between more neighbourhood social cohesion and less alcoholic drinking and smoking is not surprising. For adolescents, these health risk behaviours may be connected with social situations with peers and a more connected neighbourhood where norms and informal social control inhibit adolescent drinking and smoking. Adolescent alcohol and drug use has been found to associate with less social capital after controlling for family and individual characteristics (Winstanley, Steinwachs, Ensminger, Latkin, Stitzer & Olsen, 2008). Children living in a more socially connected neighbourhood were likely to drink and smoke less, however it is worth noting only a small percentage of the respondents reported that they either smoked or drank alcohol therefore this result needs to be treated with caution.

A European study by Aslund and Nilsson, (2013) into adolescent alcohol consumption and smoking found neighbourhood social capital was an important factor in reducing health risk behaviours. The pathways of influence of a more cohesive neighbourhood may be through adult and peer disapproval and role modelling of healthier behaviours. Research into the influence of neighbourhood social processes and youth's drinking and smoking with other contexts is limited and the underlying drivers are complex. More work in this area would contribute to potential interventions to support improvements in adolescents' health.

A further structural neighbourhood factor influencing drinking and smoking is the availability in the neighbourhood of shops and supermarkets conducive for children to purchase alcohol and cigarettes, but the study did not examine adolescent's exposure to these types of retailers. Research suggests there is a relationship between concentrated alcohol outlets, disadvantaged neighbourhoods and more youth drinking (Truong, 2009; Huckle, Huakau, Sweetsur, Huisman & Casswell, 2008). This complex picture of different relationships in the role of neighbourhood structural and social associated with different adolescent health outcomes is

supported by some of the literature but information was not collected about alcohol outlets in this study.

7.7 Mediating influences for child outcomes

Examination of the underlying mechanisms predicting child outcomes revealed a number of relevant mediators. Parent support was the most significant factor that mediated relationships between neighbourhood social connectedness, adolescents' faring better psychologically and drinking and smoking less. A study by Vieno et al. (2010) found an indirect effect of social capital on children's antisocial behaviour through effects on parenting. This links with Coleman's (1988) theory, which framed social capital as an important resource that resides in the intergenerational relationships of parents and children. Further research into the influence of social capital through families is required to illuminate the relevance for child outcomes.

The role of health behaviours as a mechanism behind the relationship between neighbourhood social capital and individual health is gaining interest amongst researchers. Mohnen, Volker, Flap, and Groenewegen, (2012) commented on a paucity of studies investigating health behaviour as a mediating factor between social capital and neighbourhood health. In the current study peer health modelling such as friends paying attention to a healthy diet and less drinking of alcohol and smoking was found to mediate the relationship between neighbourhood social cohesion and self-rated health. This may support the arguments from Kawachi (1999), that neighbourhoods featuring more social capital control negative health behaviours and also endorses healthy norms of behaviour. Further research into the pathways involved behind the relationship between social capital, health behaviours and adolescent health would be beneficial.

7.8 Perception of weight

There is a growing interest in clarifying the features of the neighbourhood which may impact on child obesity. The UK's Department of Health's recent survey identified a trend of an increasing number of teenage children being overweight or obese (DH, 2013). Research from an ecological perspective is limited into the direct and indirect effects of the neighbourhood on adolescent weight (Stafford, Cummins, Ellaway, Sacker, Wiggins & Macintyre, 2007).

The present study aimed to add to knowledge about whether the neighbourhood context was relevant to child weight. The results in the present study mirroring self-rated health and health behaviours, suggested deprivation was not relevant in predicting teenagers' weight, according to their self-definitions. However, there was support for the hypothesis that social cohesion would be a predictor of weight. Neighbourhood social cohesion, location and being female were the only significant factors predicting perceptions about weight. Other research has found a relationship between neighbourhood social processes and lower weight. Cohen et al., (2006) found children residing in neighbourhoods that featured less collective efficacy were more likely to be obese. The author concluded the majority of variation in weight status was at the individual level, and neighbourhood factors played a small but potentially significant role in body mass. Children's views about their weight in the present study were subjective. In the Cohen study, children responded about their height and weight to enable researchers to calculate the BMI measure. Future research from an ecological perspective, examining the influence of multiple contexts and using more objective measures of weight would be useful.

The finding that girls were more likely to perceive that they were overweight compared to boys is not surprising. Research suggests there are many,

sometimes, conflicting reasons for weight problems in girls, including psychological and behavioural factors (Wadden, Brownell, & Foster, 2002). A relevant factor may be that the girls in this study reported more psychological adjustment problems and emotional symptoms compared to boys. Neighbourhood stressors from living in area characterised by crime may influence weight. Taylor and Repetti (1997) argued that threatening environments speed up the biological systems such as hormones which are related to central obesity.

It is also possible that the importance of living in a neighbourhood with more social cohesion is more influential for girls compared to boys. A European study by Mota, Santos, Pereira, Teixeira, and Santos (2009) into obese adolescent girl's perceptions of neighbourhoods and physical activity found the availability of recreational facilities and social environment was associated with being more active. Similarly a further study (Evenson, Scott, Cohen & Voorhees, 2007) found in a study of girls, that aspects of the neighbourhood including lower crime, access to physical activity facilities were associated with a lower BMI. Perhaps teenage girls benefit from a neighbourhood which is emotional supportive, and this encourages girls to exercise more.

There were limitations to the current study in that local food outlets and green space were not examined. The availability of certain types of retailers is also implicated in healthy eating. Studies (Cummins, McKay & MacIntyre, 2005; Lopez, 2007) suggested that a greater level of neighbourhood deprivation was associated with a greater prevalence of fast-food outlets which feature fat high density foods. The role of consuming convenience foods outside the home is therefore likely to be important for teenagers' weight. The extent of green space available for play or recreation is also relevant (Chen & Paterson, 2006) and future research may usefully examine these influences.

7.9 Neighbourhood volunteering

Social capital is thought to have the potential to be a supportive factor for a wide range of adolescent health and well-being outcomes (Kawachi, Kim, Coutts & Subramanian, 2004). Putnam (2000) discussed reciprocity and trust as central to his theory of social capital and mentioned volunteering as a way to create social capital. Adolescent volunteering may help create psychological connections to the local community, which could result in feelings of efficacy and support, which may in turn have a positive effect on adolescent well-being and health behaviours.

Adult studies have found a relationship between volunteering and well-being (Mellor Hayashi, Firth, Stokes, Chambers & Cummins., 2008) and physical health (Tang et al., 2009). A recent study found that volunteering affected the decline of depression (Kim, 2010) and participation in supervised and organised activities led to fewer problem behaviours, increased educational attainment and was associated with better psychosocial adjustment (Mahoney, Larson, Eccles & Mahwah, 2005). The current study found support for this previous research, adolescents who volunteered in the neighbourhood were likely to have fewer behavioural problems, better self-rated health, engaged in fewer adverse health behaviours (smoking and drinking) and were more prosocial. Putnam's (2000) theory about bonding and bridging may be particularly relevant in explaining this finding. It is plausible children who volunteered benefited from bonding and bridging social capital which provided a buffer from stressors within the neighbourhood which in turn, linked to better general health. A specific example relevant to health is a volunteering project for youth in location one, described in qualitative interviews. Teenagers were encouraged to attend a course to 'think of ways to work with neighbours to build a healthier local environment.' In addition some children volunteered for faith organisations and in qualitative interviews children discussed the importance of the support they gained from their religious

beliefs. A small US study involving adult volunteering found that more religious social capital was linked with reports of less urban stress (Maselko, Hughes, & Cheny 2011). The opportunities presented by local volunteering and membership of faith organisations for teenagers may promote the development of trust and cooperative relations between members of a community and may thus contribute to enhanced child well-being.

There is substantial research into children's prosocial behaviour which suggests helping and comforting others is important for positive outcomes (Caprara, Barbaranelli, Pastorelli, Bandura & Zimbardo, 2000). In the current study children who received more friend and family support were more likely to report more prosocial behaviour. Social cohesion failed to be a predictor for prosocial behaviour but other studies suggest, children who reside in cohesive communities and are able to draw on both structural and social resources, may be likely to exhibit more caring behaviour.

7.10 Life satisfaction

To help disentangle the different factors relevant for child well-being, the study explored the interrelated neighbourhood contexts found to be relevant for children's reported happiness, measured through children identifying on a thermometer style scale how satisfied they were with their lives. Life satisfaction has been shown to measure something different to psychological well-being which is often framed as children exhibiting fewer emotional and behavioural problems (Huebner, 2004). The mechanisms involved in adolescent life satisfaction are said to be complex, and findings differ concerning the role of the neighbourhood and structural disadvantage (Bergman & Scott, 2001).

Support from parents and positive peer health behaviours were positively associated in bivariate analyses with higher adolescent life satisfaction, this was

reflected in the qualitative interviews, when the children discussed the importance of family for their happiness and the value of living healthily, participating in sport and exercise with friends was also important for their satisfaction with life. However taking all factors into account in the regression modelling, neighbourhood social cohesion and parent support were the only significant predictors of life satisfaction and not neighbourhood deprivation or peer support. The relevance of neighbourhood cohesion reflects a recent New Zealand multilevel study (Aminzadeh et al., 2013) of students living in deprived neighbourhoods which concluded living in areas with more social cohesion were likely to have higher self-reported well-being. However, there is generally a lack of research into child life satisfaction within a neighbourhood context (Kawachi, et al., 2004). Perhaps social cohesion influenced children's life satisfaction through psychosocial processes by providing social support with the opportunities for bonding and social engagement. A study found children who perceive more neighbourhood trust reported greater subjective well-being (Eriksson, et al., 2011). Gender was also relevant for child happiness with girls in the present study less satisfied with their lives but this needs to be treated with caution as the underlying pathways appear to be complex.

One problem with the present investigation is the implication that it is possible to illuminate life satisfaction from a single self-report tool and to using self-report due to issues such as social desirability and developmental changes. Nonetheless, Huebner (1991) concluded that life satisfaction measures correlate in theoretically helpful ways with a diversity of life satisfaction constructs. Support for studying children using the life satisfaction ladder utilised in the present study is found from the World Health Organisation using this approach to study children's well-being in thirty-five countries (UNICEF, Adamson, 2007). In summary the importance of social cohesion and children's life satisfaction suggests further research using a

number of methodologies e.g. observation (Gilman & Huebner, 2003) would be helpful.

7.11 Parent-adolescent agreement

There is a limited amount of conflicting research into parental agreement and child outcomes. Studies illuminating parent and child perspectives are helpful to understand from multiple perspectives the neighbourhood factors relevant for positive child outcomes. Some research suggested that parents and children are likely to hold different perspectives about a range of issues. Parents overestimated, compared to their children, the level of general health and mental health (Waters, Stewart-Brown & Fitzpatrick, 2003); Tak, te Velde, de Vries & Brug, (2006) found the average consumption of fruit and vegetables reported by children was significantly higher than reported by their parents. A strength of the current study and an innovative aspect should have been the comparison between parents and their children's responses about the neighbourhood and about parent support, but this was weakened by the low response rate from parents. Analysis involved assessing the level of agreement about these characteristics and whether agreement between parent and adolescent was relevant in predicting child outcomes. A further objective in this study was to illuminate parents' and their children's' agreement about neighbourhood social cohesion and whether this was influential for adolescents' health and well-being. This was driven by a previous research study across twenty cultures which concluded only modest parent and child agreement about children's emotional problems (Ginzburg, 2009). In the present study parent-child agreement about neighbourhood social cohesion suggested agreement was important for psychological adjustment, fewer peer problems and less child conduct problems. However as the sample of parent and children was small, the results need to be treated with caution.

The study is useful as an initial exploration of parents' and children's perspectives about the neighbourhood but a more representative sample of parents would be needed. The parents who took part in the study were the most involved parents. The methodological challenges in recruiting parents to take part in the study highlight the difficulties in achieving multiple family perspectives to better understand the influences on children's health and well-being.

7.12 Adolescents as social actors in the neighbourhood

In assessing neighbourhood effects on children's outcomes, adolescents are often framed as passive recipients and researchers take a perspective of analysing the possible influences on children through the adult lens. Barnes et al. (2006) discussed the importance of children participating in their communities and gave numerous examples of youth participation to develop services and resources in their communities. A UK Save the Children programme in Scotland (2005) set the objective of involving children and young people in a local community improvement initiative, the authors conclusions included:

'Children and young people, when given practical, accessible ways to contribute, bring perspective, energy and enthusiasm, galvanising others - adults and peers alike - taking effective joint action, and achieving concrete outcomes with wider benefits'.

A strength of the present study is the open methodology which encouraged children to define and interpret, from their perspective, the essential characteristics in the neighbourhood for their health and well-being. The interviews raised a number of novel concepts including the importance of playing sport locally with friends for feelings of happiness and special family places for spending time together; and this resonates with the research by Nicotera (2008).The adolescents discussed their roles within the neighbourhood giving examples of agency,

including intervening to stop groups of boys fighting and wanting to make changes for the betterment of the community. The adolescents' views about the social characteristics of their neighbourhoods were interesting. Supporting these views from the survey, most children felt they belonged to the neighbourhood and thought it was a friendly place where they could go to people for help. However in contrast most teenagers did not visit their neighbours' homes and more teenagers felt people couldn't be trusted even though they reported a good level of social connectedness. This suggested a complex picture of children's social relationships within a neighbourhood. The incorporation of children's voices into research about the environment and children faring well is essential to help understanding and to progress from the research perspective of a conceptualisation of environment and place (Nicotera, 2007). Only by paying attention to the 'voices' of teenagers, will researchers provide space for youth to speak out about how they construct their neighbourhoods and to add to knowledge about the influences on their health and happiness.

7.13 Limitations

Researchers have concluded there are a multiple problems in both defining and then measuring the neighbourhood dimensions important for youths' health and well-being (Leventhal & Brooks-Gunn, 2000). One major challenge is the operational definition of the neighbourhood and academics use a variety of representations of neighbourhood size which include city blocks, census tracts and lower super outputs areas. These governmental and administrative boundaries are conducive to hierarchal linear modelling, and thus attractive to researchers. The present study included the Indices of Multiple Deprivation at the lower super output area level, to model the influences important for teenager's health and well-being, in as detailed a way as possible. However all structural deprivation data such as the IMD, may not necessarily represent the nature of the neighbourhood that is

most relevant to adolescent outcomes (Farrell, Aubry, & Coulombe, 2004). Barnes (2007) discussed alternative definitions of the character and size of a neighbourhood by residents and concluded that neighbourhoods may be more heterogeneous than research suggests. This was supported by residents' self-definition of neighbourhood boundaries in several UK communities (Barnes, 2007). The fact that structural deprivation in this study failed to predict life satisfaction or any health outcomes tentatively supports the view of the need to use a number of measures to examine the structural processes important for children faring well.

Additional methods such as geographical information systems (GIS) enable researchers to collect data about neighbourhoods defined geographically by the residents. Observation provides a way to describe neighbourhoods in more detail than administrative data but is costly to collect. A further innovative technique is the use of observation though Google Street View. This technique provides new opportunities to measure neighbourhood characteristics and studies suggested this methodology is a valid alternative to more traditional observation techniques (Odgers, Caspi, Bates, Sampson & Moffitt, 2012). Children's own views are held to be very important. The present study did investigate through the qualitative interviews and the surveys adolescent's perspectives about the neighbourhood but using more innovative methods such as drawings, photos and videos would have strengthened the study. Striving to find alternative ways for youth to determine the characteristics relevant for their health and happiness may be through the use of mobile phones. The use by teenagers of smart phones with photographic capability is well documented. A study by PEW (2012) concluded 3 out of 4 teenagers own a mobile phone. In a relevant study by Ferster and Coops (2013) the authors discussed the development of an effective framework for using smart phones for observation of the environment. The use of GIS and other technology will support

the capturing of neighbourhood factors and relationships important for child health and happiness.

A further challenge for researchers and for the current study is the measurement of social capital. The study investigated social capital represented by the measures neighbourhood collective efficacy, sense of belonging and individual participation in community volunteering; viewed central to the construct. This study was designed to overcome this through a selection of social capital measures known to be applicable for adolescent outcomes. This contrast with the common practice of researchers being constrained by using retrospective social capital measures in pre-existing country surveys such as the UK Health Education Authority survey (Cooper et al., 1999; Harpham, Grant, Thomas, 2002). In the current study social capital predicted a range of adolescents' health and well-being outcomes but there remains a need to unpack the mechanisms influential for positive outcomes. Portes (1998) cautioned that too many disparate social factors have been placed within the social capital concept resulting in a loss of meaning. He argued for the importance of individual social capital rather than aggregated measures at the community level. Future research examining the underlying mechanisms influential with individual neighbourhood social capital for teenagers' positive outcomes are likely to be key to the development of successful interventions.

The majority of research to date on collective efficacy is based on U.S. research. However in the UK neighbourhood boundaries are more porous and therefore the effects of collective efficacy may be distributed differently within and across adjoining neighbourhoods (Odgers, 2009). This is a potential limitation for the interpretation of the present study; future work is required to study the influence of social cohesion to validate the findings of its importance for a spectrum of outcomes, including psychological adjustment, life satisfaction and health.

A further methodological challenge is that the outcome data was primarily self-report. Empirical research suggests problems for the validity of adolescent response bias due to adolescents' desire for attention and social desirability; especially for alcohol, tobacco use, dietary behaviours and physical activity (Brener, et al., 2003). In the current study teenagers completed the self-report measure at school in the presence of peers, teachers and the researcher; this may have influenced responses. A meta review of factors affecting validity of self-reported health-risk behaviour among teenagers proposed biochemical measures as the gold standard in validations studies because they are less susceptible to bias. It is plausible in the current study smoking and drinking of alcohol were influenced by such factors and resulted in under reporting. The researcher was aware of this problem and procedures were put in place to support anonymity and confidentiality but issues of validity are still possible. A further possible limitation in the study was the use of adolescent self-reports for neighbourhood predictors as well as outcomes, some scholars suggest this can result in bias (Raudenbush & Sampson, 1999). However empirical research widely uses the self-report approach widely. An objective of this study was to counter this in part by including the administrative measure for neighbourhood deprivation and by capturing adolescent and parent perspectives of the neighbourhood; unfortunately due to recruitment problems the sample of parents was limited.

A further limitation was that, although information about neighbourhood deprivation was historical, based on the IMD 2000, the basic analysis for the study was cross sectional for study 2 and study 3, and causal effects cannot be determined. This could be improved by longitudinal research, looking first at neighbourhood characteristics and subsequently at well- being and behavioural outcomes. It would also be important to conduct such research in a broader set of locations

differing in terms of the urban or rural nature and in terms of the ethnic composition of the population.

There were extensive challenges in recruiting participants to the two survey studies (studies 2 and 3). The researcher made considerable effort to recruit more participants but the limited sample sizes for these studies is a major limitation. The researcher planned the required sample based on power calculations (see sections 3.3; 3.41 & 3.51). The planned sample size for the adolescent study (study 2) was 170 children, 79 per site. This number was achieved in location one but fell short in location two by six participants, which limited the study to come extent. However the major limitation was the small size for study 3, comparing adolescent and parental views of the neighbourhood.

The parent study (study 3) was planned to be exploratory, to compare parents' and their children's perspectives of the neighbourhood with a sub sample from study 2.Thus it would have been sensible to over-recruit for study 2 expecting than there might be a low level of acceptance from parents, which had been anticipated.. Fisher (2003) discussed ethical problems when using surveys for youth and their parents' and the importance of parents taking the research seriously, have faith in the integrity of the researcher, and a belief the study will contribute to illuminating the nature of youth's problems..

The recruiting strategy entailed sending study information through postal packs to children's homes but addressed to parents. The final sample achieved was 65/129 parent questionnaires, a 50.4% completion rate. A search of research articles recruiting through schools in the databases PsychARTICLES and PsychINFO, using the search fields of neighbourhood parent, health and well-being resulted in only five studies. A review of these found parent response rates of between 44% and 67% (Crawford, 2010, Wu, 2010). The small sample sizes for study 3 severely

limits the generalisability of this aspect of the research and the possibility of sample bias. However this study provides valuable information about difficulties in recruiting parents of children involved in a community sample. Steps in future research to address the small sample size include building stronger rapport with members of the school e.g. teachers to obtain their support to the study. The researcher in this study did build good relationships with the teaching staff but there was a reluctance to ask parents to be involved in the study. This could be addressed by discussing and planning for this at earlier stages of the research project to develop ways of improving the parent sample size. This issue could be addressed in future work by additional planning time prior to recruiting participants, developing ways to communicate more effectively with parents rather than relying on communication via the school. Focus groups may be useful to improve the communication material to parents and children, to determine how to engage them in the research process. In addition to the small sample size a further limitation of study 3 is that the parents who took part reported very high levels of involvement in their children's lives which may result in systematic bias. However the discussion of the methodological challenges in recruiting parents highlights the difficulties in achieving multiple family perspectives to better understand the influences on children's health and well-being.

Overall it is essential to note that the lack of statistical power is a serious limitation for studies 2 and 3 which is discussed in more detail in the methodology chapter (see sections 3.41, p. 71-72; 3.51, p. 84). A further concern is the issue of chance, the adolescents in study 2 where selected randomly (see section 3.3.1) and only parents who agreed to the adolescent survey (study 2) where then asked to take part in study 3. The limited sample size and problems with random sampling suggest a possible type 11 error, with factors interpreted as being influential but were due to chance.

An important limitation is the problem of sample bias and confounding; the identified effects may be confounded by other correlated but unmeasured contexts. For example adolescents' from different ethnic groups may differ in their perspectives concerning social capital; due to different norms e.g. Asian adolescents may have stronger extended family structures within the local neighbourhood. This may results in biased estimates of social capital. Almeida and colleagues (Almeida, Kawachi, Molnar, & Subramanian, 2009) found in a study in Chicago that non-Latino white respondents had a significantly higher assessment of the level of social cohesiveness than respondents from all other ethnic groups. As well as unmeasured factors, the relationship between the different factors involved is important. For example, Subramanian and colleagues (Subramanian, Lochner, & Kawachi, 2003) noted that perceptions of social cohesion can vary from one specific geographical neighbourhood to another of similar ethnic composition. In the present study no effect was identified for ethnic background in predicting children's health and well-being but this may be due to the sample or to the way ethnic background was measured. More comparative cross-national research would help understanding concerning the mechanisms involved in social capital and influences on adolescent health and well-being for those with different ethnic backgrounds, and in relation to the ethnic backgrounds of neighbours..

A further weakness of the study was using self-report methods, which raises the possibility of response bias. Adolescents may respond in certain ways due to the desire for attention, or perhaps the desire to seem 'cool' or 'bad'. In a meta review of 100 studies, Brener et al. (2003) examined self-report for six types of health risk behaviours (alcohol and other drug use; tobacco use; behaviours related to unintentional injuries and violence; dietary behaviours; physical activity and sexual behaviour) and found that they were affected by cognitive and situational factors. These factors do not threaten the validity of self-reports of each type of behaviour

equally. Researchers should consider the threats to validity and construct their design to reduce these risks. The relevance for this research is response bias needs to be considered when interpreting the results.

A further consideration is that any response bias varies over different estimates in a survey. For example the bias may be different in response to sense of belonging to a neighbourhood compared to civic engagement. The relevant question is what causes a survey variable to correlate with the likelihood of a response? It could be argued that in this research, parents of girls were more likely to give permission for their child to take part in the study as the focus on health and well-being was more relevant for them than for parents of boys and hence cause systematic bias. However as parents and their children both needed to give permission before taking part there are other factors impacting on this, including the attitudes of boys versus girls to taking part in survey research.

7.14 Policy and Practice Implications

Parents in the three studies were influential for better outcomes for adolescents. This suggests family-focused parenting interventions may benefit by the consideration of the neighbourhood context. For example in the parent and adolescent study, (recognising this study's limitations), parent and child agreement about neighbourhood social cohesion was important for better teenager's psychological adjustment. Practice implications include opportunities for parents and their children to build support networks in their local community; this could be helped by planned activities in schools or local facilities such as leisure centres. There are a number of existing programmes such as the Family Growth centre in which community events are run to foster social support amongst families in high risk communities (Akers and Mince, 2008). An additional result of the present study was that neighbourhoods with more social cohesion were more positively influential for girls. Perhaps teenage girls benefit from a neighbourhood which is emotional

supportive, and this has policy implications which may suggest social support programs should differentiate in their content and approach by gender; this supports research by Rueger, (2008).

A further policy implication for high risk neighbourhoods is the approach to adolescents about neighbourhood violence and vulnerability. The interviews with teenagers included ways they cope and protect themselves from a dangerous neighbourhood, often illustrating autonomy and self-agency. Policy makers need to consider how they can involve youth in the development and implementation of policy to protect youth living in potentially violent neighbourhoods. An example of involving youth is the teenagers in the multi-cultural town were encouraged to attend a course to 'think of ways to work with neighbours to build a healthier local environment.'

The role of youth's civic engagement and the link to teenagers' positive health and well-being was identified in this study. Projects to involve and encourage adolescents to volunteer locally mat be beneficial and adolescent volunteering may help create psychological connections to the local community, which could result in feelings of efficacy and support, which may in turn have a positive effect on adolescent well-being and health behaviours.

The results of the research also suggested peer health modelling is relevant to teenagers' positive health behaviours such as eating healthy and taking exercise. The implication of this is the promotion of health information and endorsing healthy norms of behaviour such as physical exercise within a peer context (Kawachi, 1999). Local social media campaigns which include blogposts which convert immediately into Facebook posts and tweets with links about health lifestyles (Healthykidscommunities, 2016) would help positive messages to youth.

7.15 Conclusion

In summary this research showed a complex picture of the neighbourhood and its potential for children's health and well-being. The variation in the structural and social neighbourhood processes important for adolescents faring well is interesting. In response to the research questions, neighbourhood deprivation, social cohesion and the proximal support of friends and family predicted psychological adjustment. In contrast the lack of a relationship between more deprived neighbourhoods and life satisfaction or health needs further investigation, but may suggest these aspects of chid and adolescents development are less likely to be affected by negative structural characteristics whereas social processes are more relevant.

The relevance of neighbourhood structural deprivation for adolescents' poorer psychological adjustment supports the main body of empirical research (Barnes, Belsky, Frost, & Melhuish, 2011; Leventhal & Brooks-Gunn, 2000, Snedker, 2013). Nevertheless, the failure of neighbourhood deprivation in the present study to predict child health problems supports research by Jokela (2015). This neighbourhood study of 17,000 adults from the British Household Survey concluded the impact of neighbourhood structural deprivation (IMD) on health was exclusively due to differences between individuals rather than difference between neighbourhoods. Future research investigating adolescents' neighbourhood health differentials would be beneficial and may support understanding of whether and how the fundamental inequalities within a community are relevant for child health.

The role of social cohesion as a predictor for an array of teenagers outcomes is particularly worthy of note. The findings from this study suggested a neighbourhood characterised by more social connectedness may promote better adolescent health and well-being. The perspective of adolescents as developers of social capital suggested a role for teenagers who spend more time in the

neighbourhood, to create connections and build networks and relationships essential for their own well-being and the wider group of residents. An example of teenagers' self-agency included students in studies 1 and 2 who reported taking part in local volunteering. Questionnaire responses in study 2 found that more adolescent neighbourhood volunteering predicted less child anti-social behaviour, better self-rated health and less drinking and smoking. There is a paucity of research into the role of neighbourhood volunteering in relation to child health and well-being. This highlights the importance of listening to teenagers' voices and suggests that additional studies would be useful to investigate in more detail youth civic engagement within a neighbourhood and its influence on their health and well-being.

The positive effect of neighbourhood social processes for an array of child health and well-being outcomes is interesting; the level of social capital within a neighbourhood may help buffer the harmful effects of deprivation. This finding is helpful to alleviate, in part, the gap identified by Morrow, 1999, and Kawachi, 2007, for studies into the relevance of neighbourhood social processes for improving the lives of children. The present study suggested the pathways for indirect effects on children's health are complex and tentatively the study suggested health enhancing behaviours and peer health modelling behaviours mediated the relationship between social cohesion and self-rated health. A recommendation for subsequent research would be to explore more precisely the pathways between the neighbourhood characteristics and young people's health which should help to clarify the underlying mechanisms important for positive child outcomes.

There is minimal research on the role of the neighbourhood and well-being for young people; most research is with young adults or students (Vera, Thakral, Gonzales, Morgan, Conner, Caskey, Bauer, Mattera, & Clark, 2008). The present study aimed to clarify the important influences on child well-being in two UK

neighbourhoods. In study one, teenagers discussed a variety of important factors including social support from their community, parents and friends that they considered important for their happiness, and study two suggested social cohesion was an important factor in promoting their life satisfaction. Perhaps social cohesion influenced adolescent life satisfaction through psychosocial processes by providing social support with the opportunities for bonding and social engagement. A study found that those who perceive more neighbourhood trust reported greater subjective well-being (Eriksson, et al., 2011).

The importance in study one of green space and places for physical activity for happiness is interesting. Weinstein (2015) in a study to investigate the links among contact with natural environment, community cohesion and crime, argued that adults who can contact local nature perceive their communities as more cohesive and social cohesion was linked to individual well-being. Future research investigating the role of a community green space with neighbourhood social connections and adolescents' well-being would be beneficial.

A novel aspect of this study was the difference in gender for life satisfaction. Girls were less satisfied with their lives. While this needs to be treated with caution, it suggests that further investigation may be important to clarify the complex underlying pathways. It has been shown (Vera, 2012) that for adolescents in an urban environment school satisfaction predicted life satisfaction for boys, but family satisfaction predicted life satisfaction for girls and neighbourhood satisfaction predicted negative affect. A further study by Shin (2010) argued neighbourhood satisfaction is a significant influence of overall life satisfaction for adolescents. Research examining in more depth the interaction between gender and the relevance of neighbourhood factors for health and well-being would be helpful.

This research reemphasised the importance of studying the multiple context surrounding the child (Bronfenbrenner, 1979). The relevance and interplay of different neighbourhood systems and the family and friends for adolescents' health and happiness still remains blurred, particularly for certain outcomes such as perceived weight. However, this study suggested supportive friends and family, living in a neighbourhood with more social connectedness and participation in volunteering were important for more well-being. This research substantiates the importance of connecting adolescents to the distal and proximal influences on their health and well-being; the complexities and challenges to contributing to knowledge in this area is summarised by one of the adolescents in the study:

'Well-being it's the whole egg, it's like everything and everyone is in there'.

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Appendix A

Birkbeck
UNIVERSITY OF LONDON

Departmental Ethics Committee
DEPARTMENT OF PSYCHOLOGICAL SCIENCES
BIRKBECK COLLEGE UNIVERSITY OF LONDON

CLASSIFICATION OF RESEARCH PROPOSAL

Date of Submission:	March 2011
Investigator:	Jane French
Reference Number:	101158
Title of project:	Young people's experience of well-being

Dear Jane

The above application has been given ethical approval by the departmental ethics committee.

You should be aware that it is your responsibility to report any unexpected problems or events arising from the research which might have adverse consequences for you and/or your participants. In the first instance, please discuss with your supervisor who will advise you as to whether the problem causes a change to the planned research and needs further ethical approval from the committee. If so, please submit a revised application giving details of why this is necessary.

Good luck with the research.

Virginia Eatough
Chair of the departmental ethics committee

Date: 27-03 -11

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THE QUEEN'S ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION
2006

Appendix A2

Departmental Ethics Committee
DEPARTMENT OF PSYCHOLOGICAL SCIENCES
BIRKBECK COLLEGE UNIVERSITY OF LONDON

CLASSIFICATION OF RESEARCH PROPOSAL

Date of Submission: February 2012
Investigator: Jane French
Reference Number: 111248
Title of project: Adolescent well-being

Dear Jane

The above application has been given ethical approval by the departmental ethics committee.

You should be aware that it is your responsibility to report any unexpected problems or events arising from the research which might have adverse consequences for you and/or your participants. In the first instance, please discuss with your supervisor who will advise you as to whether the problem causes a change to the planned research and needs further ethical approval from the committee. If so, please submit a revised application giving details of why this is necessary.

Approval for this study expires February 2015. If the study is still ongoing at this time please submit a renewal of ethical approval form which can be found on the departmental webpage.

Please retain this certificate for your records.

Good luck with the research.

Virginia Eatough
Chair of the departmental ethics committee

Date: 27-02-2012

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2006

Appendix A3

Information sheet (Student)

Study Code number

School of Psychology

Birkbeck College

University of London

Malet Street,

London WC1E 7HX

020-7631 6207

Researcher: Jane x

Title of Study: The effects of the neighborhood on adolescent well-being.

This study is trying to find out about what makes teenagers feel happy. The study is taking place in two different towns including your own. It is part of a research study for Birkbeck, University of London. Taking part will give you with a chance to describe what is really important to you and to give ideas for improvements in the area where you live. Study results, made completely anonymous so that no one person's ideas can be identified, will be shared with people who plan services in your town.

If you agree to take part, you will complete a questionnaire that will take about 50 minutes to complete. It will be administered in a quiet place at school by the researcher, Jane x. It will include questions about:

1. Your general behaviour e.g. I try to be nice to people. I care about their feelings.
2. Your friendships e.g. If you were doing something wrong would your friends try to stop you?

3. Your family life e.g. how much do parents check on where you are? Are there family rules?
4. Your physical health e.g. your height and weight, drinking patterns, and whether you smoke.
5. Your opinions about the local neighbourhood and any personal knowledge or experiences of local crime and delinquency.
6. Background details about you such as your age, gender, and ethnicity.

Some questions will have a choice of answers, your parent or caregiver will also be asked to take part in the study. They will be sent a questionnaire which will be posted to them at home. It will cover most of the same types of question but getting their opinion.

The study is organised to protect you, as set out in the British Psychological Society and the Birkbeck College ethical guidelines. I will need both you and your parent/caregiver to sign a consent form agreeing that you can be part of the study. After signing this, you still have the right to withdraw from the study at any point without giving a reason. All information collected is given a number code for computer storage so your answers will not be linked with your name or any other details about you and none of your individual answers will be identifiable in the final report. Your answers will be kept confidential unless the researcher considers that you are in immediate danger (e.g. of harming yourself, or of harm from others) in which case is required to make sure that you get most appropriate support.

If you have any questions about the study you can contact the researcher, Jane x@bbk.ac.uk or by phone number x.

The study is supervised by Professor x and she can be contacted on x if you have any queries.

If you want to go ahead with the questionnaire session please read and sign form A below and ask your parent/caregiver to read and sign form B and return BOTH forms to the school office.

A. Student Consent form

Name of student:

Title of study: The effects of the neighborhood on adolescent well being.

Researcher Jane x@bbk.ac Contact details: no. x

1. I agree to complete a questionnaire with Jane x and have read the information sheet attached to this form. I am clear on what I will have to do in this study and I have no further questions about the study.

2. I understand I can withdraw from the questionnaire session at any time and there will be no pressure for me to continue.

3. I understand I can ask questions at any time before and during the questionnaire session.

4. Data protection: I agree to Jane x using the personal information for the study and that my individual information will be kept both confidential and anonymous.

5. I understand that the information collected for the study will be kept confidential except in the highly unlikely event that the researcher has a serious concern regarding my safety or well-being.

6. I have been provided with a copy of the Information sheet and the consent form and understand the researcher will debrief me at the end of the session.

Name of student……. Signed……Date……..

Name of researcher…….Signed……Date…….

Information sheet B (parent/caregiver)

Study Code number

School of Psychology

Birkbeck College

University of London

Malet Street,

London WC1E 7HX

020-7631 6207

Researcher: Jane x

Title of Study: The effects of neighbourhood on adolescent well-being.

This study is trying to find out information about adolescents well-being in two different towns including your own and is part of a research study for Birkbeck, University of London. If you agree to take part in the study it will provide you with a chance to give information that should be useful to people planning local services. You will be asked to describe what is really important to you and provide ideas for improvements in your neighbourhood. There are two parts to the study; the first is a questionnaire session with teenagers and the second a questionnaire for their parent/caregiver.

1. Parent/Carer Questionnaire

This involves a questionnaire which will be posted to you at home or any other convenient location. To complete it you will need about 30 minutes and you will be given a pre-stamped envelope so that it can then be posted to the researcher Jane x.

The questionnaire will cover:

- The neighbourhood e.g. how closed-knit you think the neighbourhood to be, the helpfulness of neighbours, how likely your neighbours would intervene to help a neighbour in trouble.
- Family management e.g. how much you check on where your child is during the week and at week-ends and your involvement in your child's life, such as doing something together.
- Family rules e.g. whether you enforce rules for television viewing, home-work, and household tasks.

2. Adolescent Questionnaire. The questionnaire will last about 50 minutes and take place at school, conducted by the researcher Jane x. The questions cover a number of areas:

    1. Their general behaviour e.g. Do they try to be nice to people. Do they care about other people's feelings
    2. Their friendships e.g. would their friends try to stop them if they were doing something wrong?
    3. Family life e.g. how much do parents check on where they are? Are there family rules?
    4. Their physical health, e.g. their weight, whether they smoke.
    5. Their opinions about the local neighbourhood and any experiences of crime and delinquency, such as anything they have seen locally or any personal involvement.
    6. Background details about their age, gender, and ethnicity.

Some questions will have a choice of answers some will be open so they can say in their own words what they think.

The study is organised to protect everyone taking part, following guidance by the British Psychological Society and Birkbeck's ethics committee. You will be asked to give written consent before you or your child take part and, after signing consent, you can withdraw from the study at any point without giving a reason. It is planned for the results of the study to be written up as an education project.

No information provided by parents or children will be shared with any other organisation with one exception. If your child indicates that they are at risk of harming themselves or of being harmed then the researcher is required to discuss this with her supervisor so that appropriate support can be provided.

All information collected is given a number code for computer storage so your answers and your child's answers will not be linked with your names and none of your individual answers will be identifiable in the final study write-up.

If you have any concerns you can contact the researcher, Jane at xbbk.ac.uk or phone number x. The study is supervised by Professor x and she can be contacted on x if you have and queries.

If you agree to take part in the study please sign consent form B.

B. Parent/Carer Consent form –

Name of parent/caregiver:

Address:

……

Contact phone number:.....

Title of study: The effects of the neighbourhood on adolescent well being.

Researcher Jane x Contact details: jx@bbk.ac.uk Phone number x

1. I have been informed about the nature of this study and willingly consent for my child to take part.

2. I agree to completing a questionnaire sent to my home and have read the participant information sheet, which is attached to this form. I am clear on my role in this study and I have no further questions about the study.

3. I understand I can withdraw from the study at any time and there will be no pressure for me to continue.

4. I understand I can ask questions at any time before and after completing the questionnaire by contacting Jane x.

5. I understand that the results of the study will be kept confidential except in the highly unlikely event that the researcher has a serious concern regarding a child protection issue.
6. Data protection: I agree to Jane x using the personal information for the study and that my child's individual information and my information will be anonymous.

7. I have been provided with a copy of the Information sheet and the consent form.

Name of parent/carer…… Signed…….Date……..

Name of researcher……Signed……..Date……..

Appendix A4.

Interview schedule – Young people's well-being

Question 1. Hi thanks for coming along for the session. I'm just going to ask you a few questions about what life's like for you. Can we start by talking about something you did yesterday? Prompt: every day life; average day; teenagers life….
Question 2. That sounds really interesting. Follow up question to their response. Possible prompts: could talk about your background; activities sports, clubs….where you live...
Question 3. Can we talk about your friends? What do you enjoy about being with them? Prompt: Do your friends do sports? Do you have special places to hang out? Why do you go there? follow their responses…
Question 4. Tell me about a fun time with your friends /mates. Prompt: What makes you say that? follow their responses…
Question 5.What about your family, would you like to tell me about them?. Prompt: They sound great/ what comes into your mind?
Question 6. Do you do things with your family? OR What do you enjoy about being with your family? Prompt: Is there a downside to being with your family?
Question 7. What about your family and your happiness? Prompt: What makes you say that? Tell me more….
Question 8. What is your opinion about where you live? OR Do you like where you live? Prompt: What do you like to do where you live?
Question 9. Are there things about where you live you would change OR don't like? Prompt: Tell me more….What comes into your mind? When you are older do you think you would move from here?

Question 10. Now I would like to talk to you about how satisfied you are with your life. Here is a picture of a ladder (show A4 sheet of life satisfaction ladder), which is about life satisfaction, the bottom of the ladder is the worst possible life someone could have and the top the best possible life someone could have. Please look at the ladder and talk to me about how satisfied you are with your life at the moment?
Question 11. What are the important things for you to have a good life? OR What makes your life worth living?. Possible prompts: tell me more….....
Question 12. Follow up response to question 11. Prompt: I see…. Prompt: Is there anything that would make your life better? What would make you feel good about your self? Is there anything difficult about this? Can you say some more..…
Question 13. Talk to me about the people who are role models Prompt: What makes you say that? Encourage you? Support you? Do they help you with how you feel about your life? Follow their responses…
Question 14. Tell me about what its like for you where you live. Prompt: Can we talk some more……. I see…..
Question 15. What about your friends and your daily life? Prompt: tell me more…… is it different for you day to day?
Question 16. What about where you live and spend time, what do you think about this? Prompt: Where you meet people…

Appendix A5.

ADOLESCENT QUESTIONNAIRE WELL-BEING STUDY 2012 Number:

Hello and thank you for taking part in the study. Please ask the questions as honestly as you can and if you have any questions please just let me know.

	Questions about where you live. Please tick ONLY ONE box per row	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	There are good places to spend your free time (e.g. parks, shops)	❑	❑	❑	❑	❑
2	Where I live is a friendly place	❑	❑	❑	❑	❑
3	Girls in this area do not have the same opportunities as boys	❑	❑	❑	❑	❑
4	If there is any trouble in my area, young people always get the blame	❑	❑	❑	❑	❑
	Questions about how you see yourself in your neighbourhood, the area you live in					
5	I like to think of myself as similar to the people who live in the neighbourhood	❑	❑	❑	❑	❑
6	I feel like I belong to the neighbourhood	❑	❑	❑	❑	❑
7	I feel loyal to the neighbourhood.	❑	❑	❑	❑	❑
8	There are lots of people in my area I could go to if I needed help	❑	❑	❑	❑	❑
9	I know my neighbours quite well	❑	❑	❑	❑	❑
10	I visit my neighbours in their homes.	❑	❑	❑	❑	❑
11	I would feel comfortable asking to borrow food from a neighbour where I live	❑	❑	❑	❑	❑
12	People in this neighbourhood can be trusted	❑	❑	❑	❑	❑
13	People where I live are friends with local people	❑	❑	❑	❑	❑
14	People around here are willing to help their neighbours	❑	❑	❑	❑	❑

Questions about volunteering OTHER THAN AT SCHOOL. Do you take part in any of the following voluntary activities in your neighbourhood?

		Yes	No
15	Helping local people	❑	❑
16	Helping to improve your neighbourhood	❑	❑
17	Helping to raise money for charity	❑	❑
18	Helping with faith organisations e.g. church, mosque	❑	❑
19	Helping any other voluntary activity. Please specify…….	❑	❑

		Not involved at all	About once a month	About once a week	Several times a week or more
20	Taking all your volunteering into account how **often** have you volunteered in your neighbourhood?	❑	❑	❑	❑
		None	1-2 hours	3-4 hours	5 hours or more
21	If you volunteer **how many hours a month** do you volunteer?	❑	❑	❑	❑

The next section asks you about how your family supports you. Please tick ONLY ONE box per row.

	How much do you AGREE or DISAGREE with each statement:	Strongly agree almost always	Agree much of the time	Disagree once in a while	Strongly disagree almost never
22	Do your parents encourage you to do what you are interested in doing and show an interest in them	❑	❑	❑	❑
23	Are your parents interested in what you think and how you feel	❑	❑	❑	❑
24	Do your parents keep an eye out for activities that you would enjoy doing, e.g. after school, weekends	❑	❑	❑	❑
25	When you are having problems, can you talk them over with your parents	❑	❑	❑	❑

The next section asks questions about family rules.

	Please tick ONLY ONE box per row	Yes	No
26	Are you clear about the time you are expected to be home from school?	❑	❑
27	Are there young people your parent(s)/carer won't allow you to be with?	❑	❑
28	Do you talk to your parent(s)/carer about your daily plans?	❑	❑
29	In the last 24 hours have your parent(s)/carer talked to you about what you had done during the day?	❑	❑
30	In the last 24 hours have your parent(s)/carer talked to you about who you have been with?	❑	❑
31	In the last week have your parent(s)/carer taken you to some activity like sports practice etc.?	❑	❑

What do your parents/carer know about the things you do and how you spend your time.

	Please tick ONLY ONE box per row	They don't know	Know a little	Know a lot
32	Your parents/carer know about what you do with your free time?	❑	❑	❑
33	Your parents/carer know about where you are most afternoons after school?	❑	❑	❑
34	Your parents/carer know about how much time you spend watching TV; on a computer; or mobile?	❑	❑	❑

Now questions about you, remember this is completely confidential

Please tick ONLY ONE box per row	No never	Yes but only once	A few times	More than a few times

35	**Have you ever** smoked a cigarette (not just a few puffs)?	❑	❑	❑	❑	
		Never smoked	Less than I cigarette a day	Between 1 and 8	About half a pack	A pack or more
36	How many cigarettes did you smoke in the last month (if any)	❑	❑	❑	❑	❑
		None	1-3 drinks	4-5 drinks	6 or more drinks	
37	How often have you had a drink containing alcohol in the last month?	❑	❑	❑	❑	
		Yes	No			
38	Have you experienced at least one personal theft in the last twelve months?'	❑	❑			
39	In the last year have you behaved in a way that resulted in a neighbour complaining?'	❑	❑			
		No times	One time	2-5 times	More than 5 times	
40	In the past month have you had a fight with someone in the neighbourhood that involved physical violence such as hitting, punching or kicking?	❑	❑	❑	❑	

What do you think about your current weight? Please tick ONLY ONE of the three choices

41	Underweight	❑
	Just right	❑
	Overweight	❑

		Very good	Good	Fair	Bad	Very bad
42	How is your health in general?	❑	❑	❑	❑	❑
How important is it to you:		Not too Important	Important	Quite important	Very Important	
43	To feel like you are in good shape?	❑	❑	❑	❑	
44	To keep yourself in good health all year round?	❑	❑	❑	❑	
45	To have good health habits about eating exercise and sleep?	❑	❑	❑	❑	

	How many of your friends:	None	All of them	Most of them	Some of them
46	Pay attention to eating a healthy diet?	❑	❑	❑	❑
47	Make sure they get enough exercise?	❑	❑	❑	❑
48	Try to get enough sleep at night?	❑	❑	❑	❑
		Definitely	Probably	Probably	Definitely
		would not	would not	would	would
49	If you were trying to do something that was bad for your health, would your friends try to get you to stop?	❑	❑	❑	❑
50	If you were going to do something wrong would your friends try to stop you?	❑	❑	❑	❑
		Strongly agree	Agree	Disagree	Strongly disagree
51	Are your friends interested in what you think and how you feel?	❑	❑	❑	❑

Questions about where you live (Note: if you live in a number of places in the week tick the place where you spend most time).

	Do you live with (please tick one option) :	
	Both biological parents	❑
	Mother	❑
	Step family (mother and stepfather)	❑
	Other (single father, father and step mother, other)	❑

		Under one year	1-2 years	3-5 years	6-10 years	11 or more years
53	**How long have you lived in your present home?**	❑	❑	❑	❑	❑

Thank you for completing the questionnaire.

Appendix A6.

A. Background information	
1. Your name please PRINT ……	
2. Which of these cultural /ethnic groups best describes you? Please tick ONLY ONE box only.	
Asian or Asian British, Indian	☐
Asian or Asian British, Pakistani	☐
Asian or Asian British, Bangladeshi	☐
Asian or Asian British, Any other Asian background	☐
White British	☐
White Irish	☐
White Any other white background	☐
Mixed, White and Black Caribbean	☐
Mixed, White and Black African	☐
Mixed, White and Asian	☐
Mixed, any other mixed background	☐
Chinese	☐
Black or Black British, Caribbean	☐
Black or Black British , African	☐
Black or Black British , any other Black background	☐
Other ethnic group	☐
3. How old are you in years	
4. Your postcode	
5. Your gender	
Boy	☐
Girl	☐

Appendix A7.

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

Your Name ..... Male/Female

Date of Birth.....

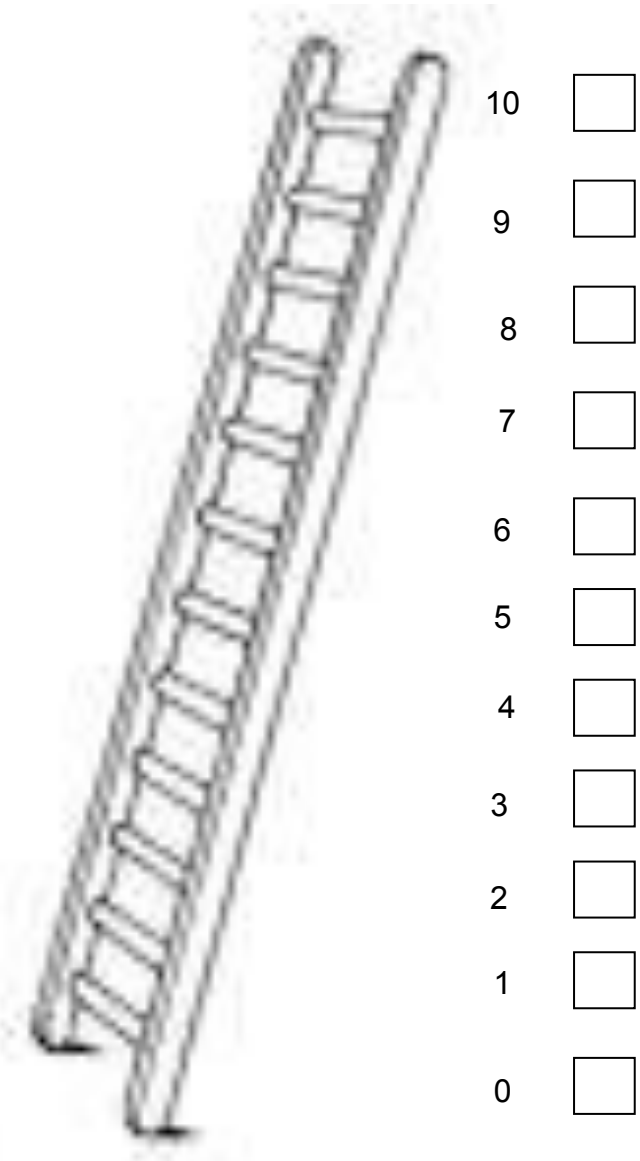
	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings	☐	☐	☐
I am restless, I cannot stay still for long	☐	☐	☐
I get a lot of headaches, stomach-aches or sickness	☐	☐	☐
I usually share with others (food, games, pens etc.)	☐	☐	☐
I get very angry and often lose my temper	☐	☐	☐
I am usually on my own. I generally play alone or keep to myself	☐	☐	☐
I usually do as I am told	☐	☐	☐
I worry a lot	☐	☐	☐
I am helpful if someone is hurt, upset or feeling ill	☐	☐	☐
I am constantly fidgeting or squirming	☐	☐	☐
I have one good friend or more	☐	☐	☐
I fight a lot. I can make other people do what I want	☐	☐	☐
I am often unhappy, down-hearted or tearful	☐	☐	☐
Other people my age generally like me	☐	☐	☐
I am easily distracted, I find it difficult to concentrate	☐	☐	☐
I am nervous in new situations. I easily lose confidence	☐	☐	☐
I am kind to younger children	☐	☐	☐
I am often accused of lying or cheating	☐	☐	☐
Other children or young people pick on me or bully me	☐	☐	☐
I often volunteer to help others (parents, teachers, children)	☐	☐	☐
I think before I do things	☐	☐	☐
I take things that are not mine from home, school or elsewhere	☐	☐	☐
I get on better with adults than with people my own age	☐	☐	☐
I have many fears, I am easily scared	☐	☐	☐
I finish the work I'm doing. My attention is good	☐	☐	☐

Your signature ..... Today's date .....

Thank you very much for your help

Appendix A8.

Life Satisfaction Ladder



Here is a picture of a ladder.
The top of the ladder 10 is the best possible life for you,
and the bottom, 0, is the worst possible life for you.
In general, where on the ladder do you feel you stand at the moment?
Tick the box next to the number that best describes where you stand at the moment'.

Appendix A9.

Neighbourhood study protocol

General session protocol (Introduction seating people 10 mins)

1. Timing- consider the time to organise young people into the room, time for them to settle down, 10 minutes. Check which participants are there by name and refer to study number.

2. Discuss with teacher what is to happen before and after the session, expect some young people will be late for various reasons.

3. Setting – try to organise a place free of distraction for the participants, away from other groups and noise.

4. Seating- set the room to ensure the young people are slightly apart this will help independent answering, minimising peer pressure. 'Please take a seat and spread out to ensure there is plenty of room.'

5. Introduction- Note: do not hand out the questionnaires until after the introduction. Say: 'I am doing a research study in (X) and hope to find out about your views of where you live. Shortly I will be handing out a questionnaire. After you have completed the questionnaire (hold the questionnaire up) which will take about 20 minutes I will be giving you two more activities which are very easy to complete. The total session with me will be about 50 minutes. I am so appreciative of your time and would be grateful if you can be as frank as possible when answering the questionnaire'.
   Remember their participation is voluntary and they can change their mind about completing the session at any time.

Questionnaire session (SDQ and neighbourhood questionnaires 30 mins)

6. Accurate responses – at the same time as the questionnaires are handed out encourage the young people to answer as they feel right now, and let them know they can ask you questions. Explain there are no right or wrong answers.

7. Confidentiality – Reassure participants that their responses will be confidential and any of their responses will be by their study number and they cannot be individually identified. Thought- if they ask why names are required explain it is to match each questionnaire with the other parts of the survey e.g. which area they live in.

8. Time limit: ask young people to take as much time as they need to ensure slower participants can have the time to finish. 'Please take as long as you need to give honest and thoughtful answers.' Then mention ' ….when you have finished make sure you check you have completed all the questions, then turn it over and I will come and collect it. I will have a quick glance to check it is complete. Please be quiet while others are finishing the questionnaire'.

9. Hand out the questionnaires and say 'please start when you are ready and make sure you read the instructions at the beginning of each question' give an example.

10. Collection- take a quick look to see if most questions are answered. Make sure that you respect their privacy and make it obvious it's only a quick glance at each page and not a detailed study of the answers. If there are blanks to questions ask them to complete the gaps.

11. Close – when all questionnaires are completed thank everyone and place the questionnaires in a labelled box.

Well-being ladder (5 mins)

12. 'Now I'm going to ask you about your life and how you are feeling at the moment. Show a large picture of the well being ladder. In a minute I will be handing out a copy of this to you , this a picture of a ladder, The top of the ladder is the best possible life for you, and the bottom, is the worst possible life for you. These instructions are detailed on your copy, please read the instruction and complete the exercise'.

Close and thanks (5 mins) remind not to talk about the study with other students.

13. Ensure you know where the young people are going next.

Administration

Organise the questionnaires in alphabetical order to aid distribution, ensure questionnaire is stapled and contains unique study number, ensure the well being ladder page and the SDQ paper also contain the unique number. Organise enough pens and distribute onto tables. Organise a box for the completed sheets.

Appendix A10.

SCHOOL PARENT QUESTIONNAIRE 2012	
It would really help me if you answer all the questions as best you can even if you are not absolutely certain or the question seem daft.	
Questions about how you see yourself in your neighbourhood	
1. How do you feel about your neighbourhood AS A PLACE TO LIVE? Would you say it is.....	
excellent	❑
good	❑
average	❑
poor	❑
very poor	❑
2. How about your neighbourhood AS A PLACE TO BRING UP CHILDREN?	
excellent	❑
good	❑
average	❑
poor	❑
very poor	❑
3. What are the differences, bringing up your child here in this neighbourhood, compared to where you were brought up? Please write your answer below.	
4. How easy is it to notice strangers around here? is it....	
very easy	❑
somewhat easy	❑
somewhat difficult	❑
very difficult	❑
5. And how many children do you know, to say hello to, who live in your neighbourhood? Would you say...	
none	❑
a few	❑
many	❑
very many	❑
6. Do you think people in the neighbourhood generally get on with each other	□
Yes	❑
No	❑
Questions about how you see yourself in your neighbourhood	□
7.I like to think of myself as similar to the people who live in the neighbourhood	□
Yes	❑
No	❑
8. I feel like I belong to the neighbourhood	

Yes	❑
No	❑
9. I feel loyal to the neighbourhood.	
Yes	❑
No	❑
10. There are lots of people in my area I could go to if I needed help	
Yes	❑
No	❑
11. I know my neighbours quite well	
Yes	❑
No	❑
12. I visit my neighbours in their homes.	
Yes	❑
No	❑
13.I would feel comfortable asking to borrow food from a neighbour where I live	
Yes	❑
No	❑
14. People in this neighbourhood can be trusted	
Yes	❑
No	❑
15. People in this neighbourhood are friends with local people	
Yes	❑
No	❑
16. People around here are willing to help their neighbours	
Yes	❑
No	❑
What is the likelihood that your neighbours could be counted on to intervene in various ways if:	
17.Children were skipping school and hanging out on a street corner	
very likely	❑
likely	❑
unlikely	❑
very unlikely	❑
18. children were spray painting graffiti on a local building	
very likely	❑
likely	❑
unlikely	❑
very unlikely	❑

19. children were showing disrespect to an adult	
very likely	❑
likely	❑
unlikely	❑
very unlikely	❑
20. a fight broke out in front of your neighbours home	☐
very likely	❑
likely	❑
unlikely	❑
very unlikely	❑
The next section asks some questions about your child:	
21. Did you talk to your child about what they had done during the last day?	☐
Yes	❑
No	❑
22. Do you know the name of the child's friends?	☐
Yes (all of them)	❑
A few of them	❑
None	❑
23. Are there children you won't let your child be with?	☐
Yes	❑
No	❑
24. Do you tell your child what time they are expected home?	☐
Yes	❑
No	❑
25. Do you talk to your child about their daily plans?	☐
Yes	❑
No	❑
26. Do you know where your child is most afternoons after school?	☐
Yes	❑
No	❑
27. Do you decide how much time your child spends watching TV; on their mobile or on the computer?	☐
Yes	❑
No	❑
28. In the last month have you and your child done any of these things together e.g. cinema, walking, sport?	
Yes	❑
No	❑

Thank you for your time in completing the questionnaire.

Appendix A11.

Earn £10.00 in cash for 30 minutes of your time and help a study in Teenagers Well-being

If I want to get involved what do I need to do?

- *Be a parent or carer of a child in Year 9 attending X School*
- *Answer a 30 minute questionnaire which asks you questions about your neighbourhood and family rules e.g. how much you check on where your child is during the week and whether you volunteer in your community*
- *Come to a Saturday session at the community Library at school and complete a 30 minute questionnaire*

Why should I help?

Help a study into local facilities and teenagers health supported by the school

Where and when: *come along to the Library on one of the Saturday sessions on June 16th or 23rd anytime between 11.00 to 1.00 pm (the questionnaire takes 30 minutes to complete)*

I would like to come to the study session at the Community Library:

My name: ……..

Please tick which session you can come to:

June 16th ☐ or June 23rd ☐

Please return the slip to school

Appendix A12.

Birkbeck College

University of London

London WC1E 7HX July 12th 2012

Dear Year 9 parent/carer,

Please help with a Year 9 Parent study and also receive a £10.00 supermarket voucher

During the last four years I have been working on a study with teachers and students at School X to find out information about Town x teenagers' well-being. I am very thankful to everyone at the school for their help. I have asked the school to pass this letter and questionnaire on to you as the next stage of the study involves asking parents in Year 9 and 10 if they would agree to take part in the study. If you are interested in taking part, all it involves is completing a questionnaire (which takes about 15 minutes to complete) and posting it back to the University in the stamp addressed envelope. The study will provide you with a chance to give information that will be useful to people planning local services, to provide ideas for improvements in your neighbourhood and help me with the study. There is a £10.00 supermarket voucher (Tesco or Sainsbury's) as a thank you for helping with the study.

The questionnaire covers:

- The neighbourhood e.g. the helpfulness of neighbours, how likely your neighbours would intervene to help a neighbour in trouble.
- Family management e.g. your involvement in your child's life, such as doing something together.
- Background details about you such as how long you have lived in the area.

The study is organised to protect everyone taking part, following guidance by the Birkbeck's University ethics committee. No information provided by parents will be shared with any other organisation. All information collected is given a number code so your answers will not be linked with your name and none of your individual answers will be identifiable in the final study write-up. If you have any concerns you can contact the researcher, Jane at x@bbk.ac.uk or phone number x.

If you would like to take part in the study please complete the enclosed questionnaire and then put it into the stamp addressed envelope and post it back to me at the University. You can choose two ways to receive the £10.00 voucher:

1. Collect the voucher from the school front desk when term starts in September.
2. Or provide your home address on the front page of the questionnaire and I will send the voucher to you within a week of the return of the questionnaire.

I do hope you will complete the questionnaire and thanks for taking the time to read this letter.

Best wishes,

Jane